SEQUENCE LISTING

<110> Choi

<120> Staphylococcus aureus Polynucleotides and Polypeptides

<130> PB560

<150> PCT/US00/23773
<151> 2000-08-31

<150> US 60/151,933
<151> 1999-09-01

<150> US 08/781,986
<151> 1997-01-03

<150> US 08/956,171
<151> 1997-10-20

<150> US 60/009,861
<151> 1996-01-06

<160> 74

<170> PatentIn Ver. 2.0

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35 40 45

Lys Ile Leu Pro Phe Asp Ala Asn Asn Ile Lys Glu Asp Met Val Val
50 55 60

Ile Gln Gly Asn Ala Phe Ala Ser Ser His Glu Glu Ile Val Arg Ala
65 70 75 80

His Gln Leu Lys Leu Asp Val Val Ser Tyr Asn Asp Phe Leu Gly Gln
85 90 95

Ile Ile Asp Gln Tyr Thr Ser Val Ala Val Thr Gly Ala His Gly Lys
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Thr Ser Thr Thr Gly Leu Leu Ser His Val Met Asn Gly Asp Lys Lys
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Thr Ser Phe Leu Ile Gly Asp Gly Thr Gly Met Gly Leu Pro Glu Ser
130 135 140

Asp Tyr Phe Ala Phe Glu Ala Cys Glu Tyr Arg Arg His Phe Leu Ser
145 150 155 160

Tyr Lys Pro Asp Tyr Ala Ile Met Thr Asn Ile Asp Phe Asp His Pro
165 170 175

Asp Tyr Phe Lys Asp Ile Asn Asp Val Phe Asp Ala Phe Gln Glu Met
180 185 190

Ala His Asn Val Lys Lys Gly Ile Ile Ala Trp Gly Asp Asp Glu His
195 200 205

Leu Arg Lys Ile Glu Ala Asp Val Pro Ile Tyr Tyr Tyr Gly Phe Lys
210 215 220

Asp Ser Asp Asp Ile Tyr Ala Gln Asn Ile Gln Ile Thr Asp Lys Gly
225 230 235 240

Thr Ala Phe Asp Val Tyr Val Asp Gly Glu Phe Tyr Asp His Phe Leu
245 250 255

Ser Pro Gln Tyr Gly Asp His Thr Val Leu Asn Ala Leu Ala Val Ile
260 265 270

Ala Ile Ser Tyr Leu Glu Lys Leu Asp Val Thr Asn Ile Lys Glu Ala
275 280 285

Leu Glu Thr Phe Gly Gly Val Lys Arg Arg Phe Asn Glu Thr Thr Ile
290 295 300

Ala Asn Gln Val Ile Val Asp Asp Tyr Ala His His Pro Arg Glu Ile

305 310 315 320

Ser Ala Thr Ile Glu Thr Ala Arg Lys Lys Tyr Pro His Lys Glu Val
325 330 335

Val Ala Val Phe Gln Pro His Thr Phe Ser Arg Thr Gln Ala Phe Leu
340 345 350

Asn Glu Phe Ala Glu Ser Leu Ser Lys Ala Asp Arg Val Phe Leu Cys
355 360 365

Glu Ile Phe Gly Ser Ile Arg Glu Asn Thr Gly Ala Leu Thr Ile Gln
370 375 380

Asp Leu Ile Asp Lys Ile Glu Gly Ala Ser Leu Ile Asn Glu Asp Ser
385 390 395 400

Ile Asn Val Leu Glu Gln Phe Asp Asn Ala Val Ile Leu Phe Met Gly
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Met Lys Asn Ala Phe
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ggtctaacgc ttcaaaaatt agggcaaatt atggaaggcc atttagaaga aattatagat 1020
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<212> PRT
<213> Homo sapiens

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Arg Lys Tyr Ser Lys Glu Gln Ala Asp Leu Gln Lys Thr Val Asp Val
35 40 45

Tyr Arg Asn Tyr Lys Ala Lys Lys Glu Glu Leu Ala Asp Ile Glu Glu
50 55 60

Met Leu Ser Glu Thr Asp Asp Lys Glu Glu Val Glu Met Leu Lys Glu
65 70 75 80

Glu Ser Asn Gly Ile Lys Ala Glu Leu Pro Asn Leu Glu Glu Glu Leu
85 90 95

Lys Ile Leu Leu Ile Pro Lys Asp Pro Asn Asp Asp Lys Asp Val Ile
100 105 110

Val Glu Ile Arg Ala Ala Ala Gly Gly Asp Glu Ala Ala Ile Phe Ala
115 120 125

Gly Asp Leu Met Arg Met Tyr Ser Lys Tyr Ala Glu Ser Gln Gly Phe
130 135 140

Lys Thr Glu Ile Val Glu Ala Ser Glu Ser Asp His Gly Gly Tyr Lys
145 150 155 160

Glu Ile Ser Phe Ser Val Ser Gly Asn Gly Ala Tyr Ser Lys Leu Lys
165 170 175

Phe Glu Asn Gly Ala His Arg Val Gln Arg Val Pro Glu Thr Glu Ser
180 185 190

Gly Gly Arg Ile His Thr Ser Thr Ala Thr Val Ala Val Leu Pro Glu
195 200 205

Val Glu Asp Val Glu Ile Glu Ile Arg Asn Glu Asp Leu Lys Ile Asp
210 215 220

Thr Tyr Arg Ser Ser Gly Ala Gly Gly Gln His Val Asn Thr Thr Asp
225 230 235 240

Ser Ala Val Arg Ile Thr His Leu Pro Thr Gly Val Ile Ala Thr Ser
245 250 255

Ser Glu Lys Ser Gln Ile Gln Asn Arg Glu Lys Ala Met Lys Val Leu
260 265 270

Lys Ala Arg Leu Tyr Asp Met Lys Val Gln Glu Glu Gln Gln Lys Tyr
275 280 285

Ala Ser Gln Arg Lys Ser Ala Val Gly Thr Gly Asp Arg Ser Glu Arg
290 295 300

Ile Arg Thr Tyr Asn Tyr Pro Gln Ser Arg Val Thr Asp His Arg Ile
305 310 315 320

Gly Leu Thr Leu Gln Lys Leu Gly Gln Ile Met Glu Gly His Leu Glu
325 330 335

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Glu Ile Ile Asp Ala Leu Thr Leu Ser Glu Gln Thr Asp Lys Leu Lys
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aaagatgaaa aaaatggcga cattactgaa gatgagttga gaagtggcac tgaagatgtt 480
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<212> PRT
<213> Homo sapiens

<400> 6
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             20                  25                  30

Asn Ser Asn Leu Leu Asn Gly Val Thr Val Asp Tyr Tyr Gly Ala Pro
         35                  40                  45

Thr Pro Val Gln Gln Leu Ala Ser Ile Asn Val Pro Glu Ala Arg Leu
     50                  55                  60

Leu Val Ile Ser Pro Tyr Asp Lys Thr Ser Val Ala Asp Ile Glu Lys
 65                  70                  75                  80

Ala Ile Ile Ala Ala Asn Leu Gly Val Asn Pro Thr Ser Asp Gly Glu
                 85                  90                  95

Val Ile Arg Ile Ala Val Pro Ala Leu Thr Glu Glu Arg Arg Lys Glu
            100                 105                 110

Arg Val Lys Asp Val Lys Lys Ile Gly Glu Glu Ala Lys Val Ser Val
        115                 120                 125

Arg Asn Ile Arg Arg Asp Met Asn Asp Gln Leu Lys Lys Asp Glu Lys
    130                 135                 140

Asn Gly Asp Ile Thr Glu Asp Glu Leu Arg Ser Gly Thr Glu Asp Val
145                 150                 155                 160
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Gln Lys Ala Thr Asp Asn Ser Ile Lys Glu Ile Asp Gln Met Ile Ala
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Asp Lys Glu Lys Asp Ile Met Ser Val
180 185

<210> 7
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<213> Homo sapiens

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atcgctcgta aagatgttgt tgaagaagta tttgacgaca gagatgaagt ggatttaagt 240
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<211> 392
<212> PRT
<213> Homo sapiens

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Glu Lys Lys Ile Pro Arg Ala Val Leu Ile Asp Ala Ile Glu Ala Ala
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Leu Ile Thr Ala Tyr Lys Lys Asn Tyr Asp Ser Ala Arg Asn Val Arg
35 40 45

Val Glu Leu Asn Met Asp Gln Gly Thr Phe Lys Val Ile Ala Arg Lys
50 55 60

Asp Val Val Glu Glu Val Phe Asp Asp Arg Asp Glu Val Asp Leu Ser
65 70 75 80

Thr Ala Leu Val Lys Asn Pro Ala Tyr Glu Ile Gly Asp Ile Tyr Glu
85 90 95

Glu Asp Val Thr Pro Lys Asp Phe Gly Arg Val Gly Ala Gln Ala Ala

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Lys Gln Ala Val Met Gln Arg Leu Arg Asp Ala Glu Arg Glu Ile Leu
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Phe Glu Glu Phe Ile Asp Lys Glu Glu Asp Ile Leu Thr Gly Ile Ile
    130                 135                 140

Asp Arg Val Asp His Arg Tyr Val Tyr Val Asn Leu Gly Arg Ile Glu
145                 150                 155                 160

Ala Val Leu Ser Glu Ala Glu Arg Ser Pro Asn Glu Lys Tyr Ile Pro
                165                 170                 175

Asn Glu Arg Ile Lys Val Tyr Val Asn Lys Val Glu Gln Thr Thr Lys
            180                 185                 190

Gly Pro Gln Ile Tyr Val Ser Arg Ser His Pro Gly Leu Leu Lys Arg
        195                 200                 205

Leu Phe Glu Gln Glu Val Pro Glu Ile Tyr Asp Gly Thr Val Ile Val
    210                 215                 220

Lys Ser Val Ala Arg Glu Ala Gly Asp Arg Ser Lys Ile Ser Val Phe
225                 230                 235                 240

Ser Glu Asn Asn Asp Ile Asp Ala Val Gly Ala Cys Val Gly Ala Lys
                245                 250                 255

Gly Ala Arg Val Glu Ala Val Val Glu Glu Leu Gly Gly Glu Lys Ile
            260                 265                 270

Asp Ile Val Gln Trp Asn Glu Asp Pro Lys Val Phe Val Lys Asn Ala
        275                 280                 285

Leu Ser Pro Ser Gln Val Leu Glu Val Ile Val Asp Glu Thr Asn Gln
    290                 295                 300

Ser Thr Val Val Val Val Pro Asp Tyr Gln Leu Ser Leu Ala Ile Gly
305                 310                 315                 320

Lys Arg Gly Gln Asn Ala Arg Leu Ala Ala Lys Leu Thr Gly Trp Lys
                325                 330                 335

Ile Asp Ile Lys Ser Glu Thr Asp Ala Arg Glu Ala Gly Ile Tyr Pro
            340                 345                 350

Val Val Glu Ala Glu Lys Val Thr Glu Glu Asp Val Ala Leu Glu Asp
        355                 360                 365

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Thr Asn Val Glu Lys Glu Ser Glu
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<213> Homo sapiens

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<210> 10
<211> 183
<212> PRT
<213> Homo sapiens

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             20   25   30

Glu Ser Met Asn Met Thr Glu Gln Ile Phe Arg Val Val Ile Pro Glu
         35   40   45

Glu Glu Glu Thr Gln Val Lys Asp Gly Lys Ala Lys Thr Thr Val Lys
     50   55   60

Lys Thr Phe Pro Gly Tyr Val Leu Val Glu Leu Ile Met Thr Asp Glu
 65   70   75   80

Ser Trp Tyr Val Val Arg Asn Thr Pro Gly Val Thr Gly Phe Val Gly
                 85   90   95

Ser Ala Gly Ala Gly Ser Lys Pro Asn Pro Leu Leu Pro Glu Glu Val
            100   105   110

Arg Phe Ile Leu Lys Gln Met Gly Leu Lys Glu Lys Thr Ile Asp Val
        115   120   125

Glu Leu Glu Val Gly Glu Gln Val Arg Ile Lys Ser Gly Pro Phe Ala
    130   135   140

Asn Gln Val Gly Glu Val Gln Glu Ile Glu Thr Asp Lys Phe Lys Leu
145   150   155   160

Thr Val Leu Val Asp Met Phe Gly Arg Glu Thr Pro Val Glu Val Glu
                165   170   175

Phe Asp Gln Ile Glu Lys Leu
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<212> DNA

<213> Homo sapiens

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<211> 274
<212> PRT
<213> Homo sapiens

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Lys Asn Tyr Val Gln Ser His Ser Phe Ile Lys Ser Leu Val Leu Gly
35 40 45

Ile Ser Gly Gly Gln Asp Ser Thr Leu Val Gly Lys Leu Val Gln Met
50 55 60

Ser Val Asn Glu Leu Arg Glu Glu Gly Ile Asp Cys Thr Phe Ile Ala
65 70 75 80

Val Lys Leu Pro Tyr Gly Val Gln Lys Asp Ala Asp Glu Val Glu Gln
85 90 95

Ala Leu Arg Phe Ile Glu Pro Asp Glu Ile Val Thr Val Asn Ile Lys
100 105 110

Pro Ala Val Asp Gln Ser Val Gln Ser Leu Lys Glu Ala Gly Ile Val
115 120 125

Leu Thr Asp Phe Gln Lys Gly Asn Glu Lys Ala Arg Glu Arg Met Lys
130 135 140

Val Gln Phe Ser Ile Ala Ser Asn Arg Gln Gly Ile Val Val Gly Thr
145 150 155 160

Asp His Ser Ala Glu Asn Ile Thr Gly Phe Tyr Thr Lys Tyr Gly Asp
165 170 175

Gly Ala Ala Asp Ile Ala Pro Ile Phe Gly Leu Asn Lys Arg Gln Gly
180 185 190

Arg Gln Leu Leu Ala Tyr Leu Gly Ala Pro Lys Glu Leu Tyr Glu Lys
        195   200   205

Thr Pro Thr Ala Asp Leu Glu Asp Asp Lys Pro Gln Leu Pro Asp Glu
    210   215   220

Asp Ala Leu Gly Val Thr Tyr Glu Ala Ile Asp Asn Tyr Leu Glu Gly
225   230   235   240

Lys Pro Val Thr Pro Glu Glu Gln Lys Val Ile Glu Asn His Tyr Ile
                245   250   255

Arg Asn Ala His Lys Arg Glu Leu Ala Tyr Thr Arg Tyr Thr Trp Pro
            260   265   270

Lys Ser

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<211> 936
<212> DNA
<213> Homo sapiens

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ggaacattct taactaaatt tgctgacaaa gtaacaatcg ttcaccgtcg tgatgagtta 540
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<211> 312
<212> PRT
<213> Homo sapiens

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            20   25   30

Val Met Ile Glu Arg Gly Ile Pro Gly Gly Gln Met Ala Asn Thr Glu
        35   40   45

Glu Val Glu Asn Phe Pro Gly Phe Glu Met Ile Thr Gly Pro Asp Leu
    50   55   60

Ser Thr Lys Met Phe Glu His Ala Lys Lys Phe Gly Ala Val Tyr Gln
65 70 75 80

Tyr Gly Asp Ile Lys Ser Val Glu Asp Lys Gly Glu Tyr Lys Val Ile
85 90 95

Asn Phe Gly Asn Lys Glu Leu Thr Ala Lys Ala Val Ile Ile Ala Thr
100 105 110

Gly Ala Glu Tyr Lys Lys Ile Gly Val Pro Gly Glu Gln Glu Leu Gly
115 120 125

Gly Arg Gly Val Ser Tyr Cys Ala Val Cys Asp Gly Ala Phe Phe Lys
130 135 140

Asn Lys Arg Leu Phe Val Ile Gly Gly Gly Asp Ser Ala Val Glu Glu
145 150 155 160

Gly Thr Phe Leu Thr Lys Phe Ala Asp Lys Val Thr Ile Val His Arg
165 170 175

Arg Asp Glu Leu Arg Ala Gln Arg Ile Leu Gln Asp Arg Ala Phe Lys
180 185 190

Asn Asp Lys Ile Asp Phe Ile Trp Ser His Thr Leu Lys Ser Ile Asn
195 200 205

Glu Lys Asp Gly Lys Val Gly Ser Val Thr Leu Thr Ser Thr Lys Asp
210 215 220

Gly Ser Glu Glu Thr His Glu Ala Asp Gly Val Phe Ile Tyr Ile Gly
225 230 235 240

Met Lys Pro Leu Thr Ala Pro Phe Lys Asp Leu Gly Ile Thr Asn Asp
245 250 255

Val Gly Tyr Ile Val Thr Lys Asp Asp Met Thr Thr Ser Val Pro Gly
260 265 270

Ile Phe Ala Ala Gly Asp Val Arg Asp Lys Gly Leu Arg Gln Ile Val
275 280 285

Thr Ala Thr Gly Asp Gly Ser Ile Ala Ala Gln Ser Ala Ala Glu Tyr
290 295 300

Ile Glu His Leu Asn Asp Gln Ala
305 310

<210> 15
<211> 1356
<212> DNA
<213> Homo sapiens

<400> 15
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cctgaattgg catttaaatt aggaagatac ggtggctatg ttctagcaca taataaaggt 120
gaaaaacacc cacgtgtact tgtaggtcgc gatactagag tttcaggtga aatgttagaa 180
tcagcattaa tagctggttt gatttcaatt ggtgcagaag tgatgcgatt aggtattatt 240
tcaacaccag gtgttgcata tttaacacgc gatatgggtg cagagttagg tgtaatgatt 300

tcagcctctc ataatccagt tgcagataat ggtattaaat tctttggatc agatggtttt 360
aaactatcag atgaacaaga aaatgaaatt gaagcattat tggatcaaga aaacccagaa 420
ttaccaagac cagttggcaa tgatattgta cattattcag attactttga aggggcacaa 480
aaatatttga gctatttaaa atcaacagta gatgttaact ttgaaggttt gaaaattgct 540
ttagatggtg caaatggttc aacatcatca ctagcgccat tcttatttgg tgacttagaa 600
gcagatactg aaacaattgg atgtagtcct gatggatata atatcaatga gaaatgtggc 660
tctacacatc ctgaaaaatt agctgaaaaa gtagttgaaa ctgaaagtga ttttgggtta 720
gcatttgacg gcgatggaga cagaatcata gcagtagatg agaatggtca aatcgttgac 780
ggtgaccaaa ttatgtttat tattggtcaa gaaatgcata aaaatcaaga attgaataat 840
gacatgattg tttctactgt tatgagtaat ttaggttttt acaaagcgct tgaacaagaa 900
ggaattaaat ctaataaaac taaagttggc gacagatatg tagtagaaga aatgcgtcgc 960
ggtaattata acttaggtgg agaacaatct ggacatatcg ttatgatgga ttacaataca 1020
actggtgatg gtttattaac tggtattcaa ttagcttctg taataaaaat gactggtaaa 1080
tcactaagtg aattagctgg acaaatgaaa aaatatccac aatcattaat taacgtacgc 1140
gtaacagata aatatcgtgt tgaagaaaat gttgacgtta aagaagttat gactaaagta 1200
gaagtagaaa tgaatggaga aggtcgaatt ttagtaagac cttctggaac agaaccatta 1260
gttcgtgtca tggttgaagc agcaactgat gaagatgctg aaagatttgc acaacaaata 1320
gctgatgtgg ttcaagataa aatgggatta gataaa 1356

<210> 16
<211> 452
<212> PRT
<213> Homo sapiens

<400> 16
Met Gly Gly Lys Tyr Phe Gly Thr Asp Gly Val Arg Gly Val Ala Asn
1 5 10 15

Gln Glu Leu Thr Pro Glu Leu Ala Phe Lys Leu Gly Arg Tyr Gly Gly
20 25 30

Tyr Val Leu Ala His Asn Lys Gly Glu Lys His Pro Arg Val Leu Val
35 40 45

Gly Arg Asp Thr Arg Val Ser Gly Glu Met Leu Glu Ser Ala Leu Ile
50 55 60

Ala Gly Leu Ile Ser Ile Gly Ala Glu Val Met Arg Leu Gly Ile Ile
65 70 75 80

Ser Thr Pro Gly Val Ala Tyr Leu Thr Arg Asp Met Gly Ala Glu Leu
85 90 95

Gly Val Met Ile Ser Ala Ser His Asn Pro Val Ala Asp Asn Gly Ile
100 105 110

Lys Phe Phe Gly Ser Asp Gly Phe Lys Leu Ser Asp Glu Gln Glu Asn
115 120 125

Glu Ile Glu Ala Leu Leu Asp Gln Glu Asn Pro Glu Leu Pro Arg Pro
130 135 140

Val Gly Asn Asp Ile Val His Tyr Ser Asp Tyr Phe Glu Gly Ala Gln
145 150 155 160

Lys Tyr Leu Ser Tyr Leu Lys Ser Thr Val Asp Val Asn Phe Glu Gly
165 170 175

Leu Lys Ile Ala Leu Asp Gly Ala Asn Gly Ser Thr Ser Ser Leu Ala
180 185 190

Pro Phe Leu Phe Gly Asp Leu Glu Ala Asp Thr Glu Thr Ile Gly Cys
195 200 205

Ser Pro Asp Gly Tyr Asn Ile Asn Glu Lys Cys Gly Ser Thr His Pro
210 215 220

Glu Lys Leu Ala Glu Lys Val Val Glu Thr Glu Ser Asp Phe Gly Leu
225 230 235 240

Ala Phe Asp Gly Asp Gly Asp Arg Ile Ile Ala Val Asp Glu Asn Gly
245 250 255

Gln Ile Val Asp Gly Asp Gln Ile Met Phe Ile Ile Gly Gln Glu Met
260 265 270

His Lys Asn Gln Glu Leu Asn Asn Asp Met Ile Val Ser Thr Val Met
275 280 285

Ser Asn Leu Gly Phe Tyr Lys Ala Leu Glu Gln Glu Gly Ile Lys Ser
290 295 300

Asn Lys Thr Lys Val Gly Asp Arg Tyr Val Val Glu Glu Met Arg Arg
305 310 315 320

Gly Asn Tyr Asn Leu Gly Gly Glu Gln Ser Gly His Ile Val Met Met
325 330 335

Asp Tyr Asn Thr Thr Gly Asp Gly Leu Leu Thr Gly Ile Gln Leu Ala
340 345 350

Ser Val Ile Lys Met Thr Gly Lys Ser Leu Ser Glu Leu Ala Gly Gln
355 360 365

Met Lys Lys Tyr Pro Gln Ser Leu Ile Asn Val Arg Val Thr Asp Lys
370 375 380

Tyr Arg Val Glu Glu Asn Val Asp Val Lys Glu Val Met Thr Lys Val
385 390 395 400

Glu Val Glu Met Asn Gly Glu Gly Arg Ile Leu Val Arg Pro Ser Gly
405 410 415

Thr Glu Pro Leu Val Arg Val Met Val Glu Ala Ala Thr Asp Glu Asp
420 425 430

Ala Glu Arg Phe Ala Gln Gln Ile Ala Asp Val Val Gln Asp Lys Met
435 440 445

Gly Leu Asp Lys
450

<210> 17
<211> 1359
<212> DNA
<213> Homo sapiens

<400> 17
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tctaaaaagt ataaagtgct acacgaggtt gctgggaaac ctatggtcga acatgtattg 120
gaaagtgtga aaggctctgg tgtcgatcaa gttgtaacca tcgtaggaca tggtgctgaa 180
agtgtaaaag gacatttagg cgagcgttct ttatacagtt ttcaagagga acaactcggt 240
actgcgcatg cagtgcaaat ggcgaaatca cacttagaag acaaggaagg tacgacaatc 300
gttgtatgtg gtgacacacc gctcatcaca aaggaaacat tagtaacatt gattgcgcat 360
cacgaggatg ctaatgctca agcaactgta ttatctgcat cgattcaaca accatatgga 420
tacggaagaa tcgttcgaaa tgcgtcaggt cgtttagaac gcatagttga agagaaagat 480
gcaacgcaag ctgaaaagga tattaatgaa attagttcag gtatttttgc gtttaataat 540
aaaacgttgt ttgaaaaatt aacacaagtg aaaaatgata atgcgcaagg tgaatattac 600
ctccctgatg tattgtcgtt aattttaaat gatggcggca tcgtagaagt ctatcgtacc 660
aatgatgttg aagaaatcat gggtgtaaat gatcgtgtaa tgcttagtca ggctgagaag 720
gcgatgcaac gtcgtacgaa tcattatcac atgctaaatg gtgtgacaat catcgatcct 780
gacagcactt atattggtcc agacgttaca attggtagtg atacagtcat tgaaccaggc 840
gtacgaatta atggtcgtac agaaattggc gaagatgttg ttattggtca gtactctgaa 900
attaacaata gtacgattga aaatggtgca tgtattcaac agtctgttgt taatgatgct 960
agcgtaggag cgaatactaa ggtcggaccg tttgcgcaat tgagaccagg cgcgcaatta 1020
ggtgcagatg ttaaggttgg aaattttgta gaaattaaaa aagcagatct taaagatggt 1080
gccaaggttt cacatttaag ttatattggc gatgctgtaa ttggcgaacg tactaatatt 1140
ggttgcggaa cgattacagt taactatgat ggtgaaaata aatttaaaac tatcgtcggc 1200
aaagattcat ttgtaggttg caatgttaat ttagtagcac ctgtaacaat tggtgatgat 1260
gtattggtgg cagctggttc cacaatcaca gatgacgtac caaatgacag tttagctgtg 1320
gcaagagcaa gacaaacaac aaaagaagga tataggaaa 1359

<210> 18
<211> 453
<212> PRT
<213> Homo sapiens

<400> 18
Met Gly Phe Met Arg Arg His Ala Ile Ile Leu Ala Ala Gly Lys Gly
1 5 10 15

Thr Arg Met Lys Ser Lys Lys Tyr Lys Val Leu His Glu Val Ala Gly
20 25 30

Lys Pro Met Val Glu His Val Leu Glu Ser Val Lys Gly Ser Gly Val
35 40 45

Asp Gln Val Val Thr Ile Val Gly His Gly Ala Glu Ser Val Lys Gly
50 55 60

His Leu Gly Glu Arg Ser Leu Tyr Ser Phe Gln Glu Glu Gln Leu Gly
65 70 75 80

Thr Ala His Ala Val Gln Met Ala Lys Ser His Leu Glu Asp Lys Glu
85 90 95

Gly Thr Thr Ile Val Val Cys Gly Asp Thr Pro Leu Ile Thr Lys Glu
100 105 110

Thr Leu Val Thr Leu Ile Ala His His Glu Asp Ala Asn Ala Gln Ala
115 120 125

Thr Val Leu Ser Ala Ser Ile Gln Gln Pro Tyr Gly Tyr Gly Arg Ile
130 135 140

Val Arg Asn Ala Ser Gly Arg Leu Glu Arg Ile Val Glu Glu Lys Asp
145 150 155 160

Ala Thr Gln Ala Glu Lys Asp Ile Asn Glu Ile Ser Ser Gly Ile Phe

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                165                 170                 175

Ala Phe Asn Asn Lys Thr Leu Phe Glu Lys Leu Thr Gln Val Lys Asn
            180                 185                 190

Asp Asn Ala Gln Gly Glu Tyr Tyr Leu Pro Asp Val Leu Ser Leu Ile
        195                 200                 205

Leu Asn Asp Gly Gly Ile Val Glu Val Tyr Arg Thr Asn Asp Val Glu
    210                 215                 220

Glu Ile Met Gly Val Asn Asp Arg Val Met Leu Ser Gln Ala Glu Lys
225                 230                 235                 240

Ala Met Gln Arg Arg Thr Asn His Tyr His Met Leu Asn Gly Val Thr
                245                 250                 255

Ile Ile Asp Pro Asp Ser Thr Tyr Ile Gly Pro Asp Val Thr Ile Gly
            260                 265                 270

Ser Asp Thr Val Ile Glu Pro Gly Val Arg Ile Asn Gly Arg Thr Glu
        275                 280                 285

Ile Gly Glu Asp Val Val Ile Gly Gln Tyr Ser Glu Ile Asn Asn Ser
    290                 295                 300

Thr Ile Glu Asn Gly Ala Cys Ile Gln Gln Ser Val Val Asn Asp Ala
305                 310                 315                 320

Ser Val Gly Ala Asn Thr Lys Val Gly Pro Phe Ala Gln Leu Arg Pro
                325                 330                 335

Gly Ala Gln Leu Gly Ala Asp Val Lys Val Gly Asn Phe Val Glu Ile
            340                 345                 350

Lys Lys Ala Asp Leu Lys Asp Gly Ala Lys Val Ser His Leu Ser Tyr
        355                 360                 365

Ile Gly Asp Ala Val Ile Gly Glu Arg Thr Asn Ile Gly Cys Gly Thr
    370                 375                 380

Ile Thr Val Asn Tyr Asp Gly Glu Asn Lys Phe Lys Thr Ile Val Gly
385                 390                 395                 400

Lys Asp Ser Phe Val Gly Cys Asn Val Asn Leu Val Ala Pro Val Thr
                405                 410                 415

Ile Gly Asp Asp Val Leu Val Ala Ala Gly Ser Thr Ile Thr Asp Asp
            420                 425                 430

Val Pro Asn Asp Ser Leu Ala Val Ala Arg Ala Arg Gln Thr Thr Lys
        435                 440                 445

Glu Gly Tyr Arg Lys
    450
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<210> 19
<211> 1317
<212> DNA

<213> Homo sapiens

<400> 19
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attcgacgtt tagataaaga aagtgacatt attatttttg aaaaagatcg tgatatgagc 120
tttgctaatt gtgcattgcc ttatgtcatt ggcgaagttg ttgaagatag aagatatgct 180
ttagcgtata cacctgaaaa attttatgat agaaagcaaa ttacagtaaa aacttatcat 240
gaagttattg caatcaatga tgaaagacaa actgtatctg tattaaatag aaagacaaac 300
gaacaatttg aagaatctta cgataaactc attttaagcc ctggtgcaag tgcaaatagc 360
cttggctttg aaagtgatat tacatttaca cttagaaatt tagaagacac tgatgctatc 420
gatcaattca tcaaagcaaa tcaagttgat aaagtattgg ttgtaggtgc aggttatgtt 480
tcattagaag ttcttgaaaa tctttatgaa cgtggtttac accctacttt aattcatcga 540
tctgataaga taaataaatt aatggatgcc gacatgaatc aacctatact tgatgaatta 600
gataagcggg agattccata ccgtttaaat gaggaaatta atgctatcaa tggaaatgaa 660
attacattta aatcaggaaa agttgaacat tacgatatga ttattgaagg tgtcggtact 720
caccccaatt caaaatttat cgaaagttca aatatcaaac ttgatcgaaa aggtttcata 780
ccggtaaacg ataaatttga aacaaatgtt ccaaacattt atgcaatagg cgatattgca 840
acatcacatt atcgacatgt cgatctaccg gctagtgttc ctttagcttg gggcgctcac 900
cgtgcagcaa gtattgttgc cgaacaaatt gctggaaatg acactattga attcaaaggc 960
ttcttaggca acaatattgt gaagttcttt gattatacat ttgcgagtgt cggcgttaaa 1020
ccaaacgaac taaagcaatt tgactataaa atggtagaag tcactcaagg tgcacacgcg 1080
aattattacc caggaaattc ccctttacac ttaagagtat attatgacac ttcaaaccgt 1140
cagattttaa gagcagctgc agtaggaaaa gaaggtgcag ataaacgtat tgatgtacta 1200
tcgatggcaa tgatgaacca gctaactgta gatgagttaa ctgagtttga agtggcttat 1260
gcaccaccat atagccaccc taaagattta atcaatatga ttggttacaa agctaaa 1317

<210> 20
<211> 439
<212> PRT
<213> Homo sapiens

<400> 20
Met Gly Pro Lys Ile Val Val Val Gly Ala Val Ala Gly Gly Ala Thr
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Cys Ala Ser Gln Ile Arg Arg Leu Asp Lys Glu Ser Asp Ile Ile Ile
20 25 30

Phe Glu Lys Asp Arg Asp Met Ser Phe Ala Asn Cys Ala Leu Pro Tyr
35 40 45

Val Ile Gly Glu Val Val Glu Asp Arg Arg Tyr Ala Leu Ala Tyr Thr
50 55 60

Pro Glu Lys Phe Tyr Asp Arg Lys Gln Ile Thr Val Lys Thr Tyr His
65 70 75 80

Glu Val Ile Ala Ile Asn Asp Glu Arg Gln Thr Val Ser Val Leu Asn
85 90 95

Arg Lys Thr Asn Glu Gln Phe Glu Glu Ser Tyr Asp Lys Leu Ile Leu
100 105 110

Ser Pro Gly Ala Ser Ala Asn Ser Leu Gly Phe Glu Ser Asp Ile Thr
115 120 125

Phe Thr Leu Arg Asn Leu Glu Asp Thr Asp Ala Ile Asp Gln Phe Ile
130 135 140

Lys Ala Asn Gln Val Asp Lys Val Leu Val Val Gly Ala Gly Tyr Val

145 150 155 160

Ser Leu Glu Val Leu Glu Asn Leu Tyr Glu Arg Gly Leu His Pro Thr
165 170 175

Leu Ile His Arg Ser Asp Lys Ile Asn Lys Leu Met Asp Ala Asp Met
180 185 190

Asn Gln Pro Ile Leu Asp Glu Leu Asp Lys Arg Glu Ile Pro Tyr Arg
195 200 205

Leu Asn Glu Glu Ile Asn Ala Ile Asn Gly Asn Glu Ile Thr Phe Lys
210 215 220

Ser Gly Lys Val Glu His Tyr Asp Met Ile Ile Glu Gly Val Gly Thr
225 230 235 240

His Pro Asn Ser Lys Phe Ile Glu Ser Ser Asn Ile Lys Leu Asp Arg
245 250 255

Lys Gly Phe Ile Pro Val Asn Asp Lys Phe Glu Thr Asn Val Pro Asn
260 265 270

Ile Tyr Ala Ile Gly Asp Ile Ala Thr Ser His Tyr Arg His Val Asp
275 280 285

Leu Pro Ala Ser Val Pro Leu Ala Trp Gly Ala His Arg Ala Ala Ser
290 295 300

Ile Val Ala Glu Gln Ile Ala Gly Asn Asp Thr Ile Glu Phe Lys Gly
305 310 315 320

Phe Leu Gly Asn Asn Ile Val Lys Phe Phe Asp Tyr Thr Phe Ala Ser
325 330 335

Val Gly Val Lys Pro Asn Glu Leu Lys Gln Phe Asp Tyr Lys Met Val
340 345 350

Glu Val Thr Gln Gly Ala His Ala Asn Tyr Tyr Pro Gly Asn Ser Pro
355 360 365

Leu His Leu Arg Val Tyr Tyr Asp Thr Ser Asn Arg Gln Ile Leu Arg
370 375 380

Ala Ala Ala Val Gly Lys Glu Gly Ala Asp Lys Arg Ile Asp Val Leu
385 390 395 400

Ser Met Ala Met Met Asn Gln Leu Thr Val Asp Glu Leu Thr Glu Phe
405 410 415

Glu Val Ala Tyr Ala Pro Pro Tyr Ser His Pro Lys Asp Leu Ile Asn
420 425 430

Met Ile Gly Tyr Lys Ala Lys
435

<210> 21
<211> 1353
<212> DNA

<213> Homo sapiens

<400> 21
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ttctcattgc caatgatgat agggacttta ttaagcgtta tttatggcat attaaatatt 120
tactttatag gatttttaga agatagccac atgatttctg ctatctctct aacactgcca 180
gtatttgcta tcttaatggg gttaggtaat ttatttggcg ttggtgcagg aacttatatt 240
tcacgtttat taggtgcgaa agactatagt aagagtaaat ttgtaagtag tttctctatt 300
tatggtggta ttgcactagg acttatcgtg attttagtta ctttaccatt cagtgatcaa 360
atcgcagcaa ttttaggggc gagaggtgaa acgttagctt taacaagtaa ttatttgaaa 420
gtaatgtttt taagtgcacc ttttgtaatt ttgttcttca tattagaaca atttgcacgt 480
gcaattgggg caccaatggt ttctatgatt ggtatgttag ctagtgtagg cttaaatatt 540
attttagatc caatttttaat ttttggtttt gatttaaacg ttgttggtgc agctttgggt 600
actgcaatca gtaatgttgc tgctgctctg ttctttatca tttattttat gaaaaatagt 660
gacgttgtgt cagttaatat taaacttgcg aaacctaata aagaaatgct ttctgaaatc 720
tttaaaatcg gtattcctgc atttttaatg agtatcttaa tgggattcac aggattagtt 780
ttaaatttat ttttagcaca ttatggaaac ttcgcgattg caagttatgg tatctcattt 840
agacttgtgc aatttccaga acttattatc atgggattat gtgaaggtgt tgtaccacta 900
attgcatata actttatggc aaataaaggc cgtatgaaag acgttatcaa agcagttatc 960
atgtctatcg gcgttatctt tgttgtatgt atgagtgctg tatttacaat tggacatcat 1020
atggtcggac tatttactac tgatcaagcc attgttgaga tggcgacatt tattttgaaa 1080
gtaacaatgg catcattatt attaaatggt ataggtttct tgtttactgg tatgcttcaa 1140
gcgactgggc aaggtcgtgg tgctacaatt atggccattt tacaaggtgc aattatcatt 1200
ccagtattat ttattatgaa tgctttgttt ggactaacag gtgtcatttg gtcattatta 1260
attgctgagt cactttgtgc tttagcagca atgttaatcg tctatttatt acgtgatcgt 1320
ttgacagttg atacatctga attaatagaa ggt 1353

<210> 22
<211> 451
<212> PRT
<213> Homo sapiens

<400> 22
Met Lys Asp Glu Gln Leu Tyr Tyr Phe Glu Lys Ser Pro Val Phe Lys
1 5 10 15

Ala Met Met His Phe Ser Leu Pro Met Met Ile Gly Thr Leu Leu Ser
20 25 30

Val Ile Tyr Gly Ile Leu Asn Ile Tyr Phe Ile Gly Phe Leu Glu Asp
35 40 45

Ser His Met Ile Ser Ala Ile Ser Leu Thr Leu Pro Val Phe Ala Ile
50 55 60

Leu Met Gly Leu Gly Asn Leu Phe Gly Val Gly Ala Gly Thr Tyr Ile
65 70 75 80

Ser Arg Leu Leu Gly Ala Lys Asp Tyr Ser Lys Ser Lys Phe Val Ser
85 90 95

Ser Phe Ser Ile Tyr Gly Gly Ile Ala Leu Gly Leu Ile Val Ile Leu
100 105 110

Val Thr Leu Pro Phe Ser Asp Gln Ile Ala Ala Ile Leu Gly Ala Arg
115 120 125

Gly Glu Thr Leu Ala Leu Thr Ser Asn Tyr Leu Lys Val Met Phe Leu
130 135 140

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Ser Ala Pro Phe Val Ile Leu Phe Phe Ile Leu Glu Gln Phe Ala Arg
145                 150                 155                 160

Ala Ile Gly Ala Pro Met Val Ser Met Ile Gly Met Leu Ala Ser Val
                165                 170                 175

Gly Leu Asn Ile Ile Leu Asp Pro Ile Leu Ile Phe Gly Phe Asp Leu
            180                 185                 190

Asn Val Val Gly Ala Ala Leu Gly Thr Ala Ile Ser Asn Val Ala Ala
        195                 200                 205

Ala Leu Phe Phe Ile Ile Tyr Phe Met Lys Asn Ser Asp Val Val Ser
    210                 215                 220

Val Asn Ile Lys Leu Ala Lys Pro Asn Lys Glu Met Leu Ser Glu Ile
225                 230                 235                 240

Phe Lys Ile Gly Ile Pro Ala Phe Leu Met Ser Ile Leu Met Gly Phe
                245                 250                 255

Thr Gly Leu Val Leu Asn Leu Phe Leu Ala His Tyr Gly Asn Phe Ala
            260                 265                 270

Ile Ala Ser Tyr Gly Ile Ser Phe Arg Leu Val Gln Phe Pro Glu Leu
        275                 280                 285

Ile Ile Met Gly Leu Cys Glu Gly Val Val Pro Leu Ile Ala Tyr Asn
    290                 295                 300

Phe Met Ala Asn Lys Gly Arg Met Lys Asp Val Ile Lys Ala Val Ile
305                 310                 315                 320

Met Ser Ile Gly Val Ile Phe Val Val Cys Met Ser Ala Val Phe Thr
                325                 330                 335

Ile Gly His His Met Val Gly Leu Phe Thr Thr Asp Gln Ala Ile Val
            340                 345                 350

Glu Met Ala Thr Phe Ile Leu Lys Val Thr Met Ala Ser Leu Leu Leu
        355                 360                 365

Asn Gly Ile Gly Phe Leu Phe Thr Gly Met Leu Gln Ala Thr Gly Gln
    370                 375                 380

Gly Arg Gly Ala Thr Ile Met Ala Ile Leu Gln Gly Ala Ile Ile Ile
385                 390                 395                 400

Pro Val Leu Phe Ile Met Asn Ala Leu Phe Gly Leu Thr Gly Val Ile
                405                 410                 415

Trp Ser Leu Leu Ile Ala Glu Ser Leu Cys Ala Leu Ala Ala Met Leu
            420                 425                 430

Ile Val Tyr Leu Leu Arg Asp Arg Leu Thr Val Asp Thr Ser Glu Leu
        435                 440                 445

Ile Glu Gly
    450
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<210> 23
<211> 1479
<212> DNA
<213> Homo sapiens

<400> 23
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caacaaatag atgatatcac tactgattca cgtacagcga gagaaggtag catttttgtc 120
gcttcagttg gatatactgt agacagtcat aagttctgtc aaaatgtagc tgatcaaggg 180
tgtaagttgg tagtggtcaa taaagaacaa tcattaccag ctaacgtaac acaagtggtt 240
gtgccggaca cattaagagt agctagtatt ctagcacaca cattatatga ttatccgagt 300
catcagttag tgacatttgg tgtaacgggt acaaatggta aaacttctat tgcgacgatg 360
attcatttaa ttcaaagaaa gttacaaaaa aatagtgcat atttaggaac taatggtttc 420
caaattaatg aaacaaagac aaaaggtgca aatacgacac cagaaacagt ttctttaact 480
aagaaaatta aagaagcagt tgatgcaggc gctgaatcta tgacattaga agtatcaagc 540
catggcttag tattaggacg actgcgaggc gttgaatttg acgttgcaat attttcaaat 600
ttaacacaag accatttaga ttttcatggc acaatggaag catacggaca cgcgaagtct 660
ttattgttta gtcaattagg tgaagatttg tcgaaagaaa agtatgtcgt gttaaacaat 720
gacgattcat tttctgagta tttaagaaca gtgacgcctt atgaagtatt tagttatgga 780
attgatgagg aagcccaatt tatggctaaa aatattcaag aatctttaca aggtgtcagc 840
tttgattttg taacgccttt tggaacttac ccagtaaaat cgccttatgt tggtaagttt 900
aatatttcta atattatggc ggcaatgatt gcggtgtgga gtaaaggtac atctttagaa 960
acgattatta aagctgttga aaatttagaa cctgttgaag ggcgattaga agttttagat 1020
ccttcgttac ctattgattt aattatcgat tatgcacata cagctgatgg tatgaacaaa 1080
ttaatcgatg cagtacagcc ttttgtaaag caaaagttga tatttttagt tggtatggca 1140
ggcgaacgtg atttaactaa aacgcctgaa atggggcgag ttgcctgtcg tgcagattat 1200
gtcattttca caccggataa tccggcaaat gatgacccga aaatgttaac ggcagaatta 1260
gccaaaggtg caacacatca aaactatatt gaatttgatg atcgtgcaga agggataaaa 1320
catgcaattg acatagctga gcctggggat actgtcgttt tagcatcaaa aggaagagaa 1380
ccatatcaaa tcatgccagg gcatattaag gtgccacatc gagatgattt aattggcctt 1440
gaagcagctt acaaaaagtt cggtggtggc cctgttgat 1479

<210> 24
<211> 493
<212> PRT
<213> Homo sapiens

<400> 24
Leu Asp Ala Ser Thr Leu Phe Lys Lys Val Lys Val Lys Arg Val Leu
1 5 10 15

Gly Ser Leu Glu Gln Gln Ile Asp Asp Ile Thr Thr Asp Ser Arg Thr
20 25 30

Ala Arg Glu Gly Ser Ile Phe Val Ala Ser Val Gly Tyr Thr Val Asp
35 40 45

Ser His Lys Phe Cys Gln Asn Val Ala Asp Gln Gly Cys Lys Leu Val
50 55 60

Val Val Asn Lys Glu Gln Ser Leu Pro Ala Asn Val Thr Gln Val Val
65 70 75 80

Val Pro Asp Thr Leu Arg Val Ala Ser Ile Leu Ala His Thr Leu Tyr
85 90 95

Asp Tyr Pro Ser His Gln Leu Val Thr Phe Gly Val Thr Gly Thr Asn
100 105 110

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Gly Lys Thr Ser Ile Ala Thr Met Ile His Leu Ile Gln Arg Lys Leu
        115                 120                 125

Gln Lys Asn Ser Ala Tyr Leu Gly Thr Asn Gly Phe Gln Ile Asn Glu
    130                 135                 140

Thr Lys Thr Lys Gly Ala Asn Thr Thr Pro Glu Thr Val Ser Leu Thr
145                 150                 155                 160

Lys Lys Ile Lys Glu Ala Val Asp Ala Gly Ala Glu Ser Met Thr Leu
                165                 170                 175

Glu Val Ser Ser His Gly Leu Val Leu Gly Arg Leu Arg Gly Val Glu
            180                 185                 190

Phe Asp Val Ala Ile Phe Ser Asn Leu Thr Gln Asp His Leu Asp Phe
        195                 200                 205

His Gly Thr Met Glu Ala Tyr Gly His Ala Lys Ser Leu Leu Phe Ser
    210                 215                 220

Gln Leu Gly Glu Asp Leu Ser Lys Glu Lys Tyr Val Val Leu Asn Asn
225                 230                 235                 240

Asp Asp Ser Phe Ser Glu Tyr Leu Arg Thr Val Thr Pro Tyr Glu Val
                245                 250                 255

Phe Ser Tyr Gly Ile Asp Glu Glu Ala Gln Phe Met Ala Lys Asn Ile
            260                 265                 270

Gln Glu Ser Leu Gln Gly Val Ser Phe Asp Phe Val Thr Pro Phe Gly
        275                 280                 285

Thr Tyr Pro Val Lys Ser Pro Tyr Val Gly Lys Phe Asn Ile Ser Asn
    290                 295                 300

Ile Met Ala Ala Met Ile Ala Val Trp Ser Lys Gly Thr Ser Leu Glu
305                 310                 315                 320

Thr Ile Ile Lys Ala Val Glu Asn Leu Glu Pro Val Glu Gly Arg Leu
                325                 330                 335

Glu Val Leu Asp Pro Ser Leu Pro Ile Asp Leu Ile Ile Asp Tyr Ala
            340                 345                 350

His Thr Ala Asp Gly Met Asn Lys Leu Ile Asp Ala Val Gln Pro Phe
        355                 360                 365

Val Lys Gln Lys Leu Ile Phe Leu Val Gly Met Ala Gly Glu Arg Asp
    370                 375                 380

Leu Thr Lys Thr Pro Glu Met Gly Arg Val Ala Cys Arg Ala Asp Tyr
385                 390                 395                 400

Val Ile Phe Thr Pro Asp Asn Pro Ala Asn Asp Asp Pro Lys Met Leu
                405                 410                 415

Thr Ala Glu Leu Ala Lys Gly Ala Thr His Gln Asn Tyr Ile Glu Phe
            420                 425                 430
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Asp Asp Arg Ala Glu Gly Ile Lys His Ala Ile Asp Ile Ala Glu Pro
        435   440   445

Gly Asp Thr Val Val Leu Ala Ser Lys Gly Arg Glu Pro Tyr Gln Ile
    450   455   460

Met Pro Gly His Ile Lys Val Pro His Arg Asp Asp Leu Ile Gly Leu
465   470   475   480

Glu Ala Ala Tyr Lys Lys Phe Gly Gly Gly Pro Val Asp
                485   490

<210> 25
<211> 1356
<212> DNA
<213> Homo sapiens

<400> 25
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tttttaaatc aagagataaa tggagtcaca attgattcac gagcaatttc taaaaatatg 120
ttatttatac catttaaagg tgaaaatgtt gacggtcatc gctttgtctc taaagcatta 180
caagatggtg ctggggctgc tttttatcaa agagggacac ctatagatga aaatgtaagc 240
gggcctatta tatgggttga agacacatta acggcattac aacaattggc acaagcttac 300
ttgagacatg taaaccctaa agtaattgcc gtcacagggt ctaatggtaa aacaacgact 360
aaagatatga ttgaaagtgt attgcatacc gaatttaaag ttaagaaaac gcaaggtaat 420
tacaataatg aaattggttt acctttaact attttggaat tagataatga tactgaaata 480
tcaatattgg agatggggat gtcaggtttc catgaaattg aatttctgtc aaacctcgct 540
caaccagata ttgcagttat aactaatatt ggtgagtcac atatgcaaga tttaggttcg 600
cgcgagggga ttgctaaagc taaatctgaa attacaatag gtctaaaaga taatggtacg 660
tttatatatg atggcgatga accattattg aaaccacatg ttaaagaagt tgaaaatgca 720
aaatgtatta gtattggtgt tgctactgat aatgcattag tttgttctgt tgatgataga 780
gatactacag gtatttcatt tacgattaat aataaagaac attacgatct gccaatatta 840
ggaaagcata atatgaaaaa tgcgacgatt gccattgcgg ttggtcatga attaggtttg 900
acatataaca caatctatca aaatttaaaa aatgtcagct taactggtat gcgtatggaa 960
caacatacat tagaaaatga tattactgtg ataaatgatg cctataatgc aagtcctaca 1020
agtatgagag cagctattga tacactgagt actttgacag ggcgtcgcat tctaatttta 1080
ggagatgttt tagaattagg tgaaaatagc aaagaaatgc atatcggtgt aggtaattat 1140
ttagaagaaa agcatataga tgtgttgtat acgtttggta atgaagcgaa gtatatttat 1200
gattcgggcc agcaacatgt cgaaaaagca caacacttca attctaaaga cgatatgata 1260
gaagttttaa taaacgattt aaaagcgcat gaccgtgtat tagttaaagg atcacgtggt 1320
atgaaattag aagaagtggt aaatgcttta atttca 1356

<210> 26
<211> 452
<212> PRT
<213> Homo sapiens

<400> 26
Met Ile Asn Val Thr Leu Lys Gln Ile Gln Ser Trp Ile Pro Cys Glu
1   5   10   15

Ile Glu Asp Gln Phe Leu Asn Gln Glu Ile Asn Gly Val Thr Ile Asp
            20   25   30

Ser Arg Ala Ile Ser Lys Asn Met Leu Phe Ile Pro Phe Lys Gly Glu
        35   40   45

Asn Val Asp Gly His Arg Phe Val Ser Lys Ala Leu Gln Asp Gly Ala
    50   55   60

Gly Ala Ala Phe Tyr Gln Arg Gly Thr Pro Ile Asp Glu Asn Val Ser
65 70 75 80

Gly Pro Ile Ile Trp Val Glu Asp Thr Leu Thr Ala Leu Gln Gln Leu
85 90 95

Ala Gln Ala Tyr Leu Arg His Val Asn Pro Lys Val Ile Ala Val Thr
100 105 110

Gly Ser Asn Gly Lys Thr Thr Thr Lys Asp Met Ile Glu Ser Val Leu
115 120 125

His Thr Glu Phe Lys Val Lys Lys Thr Gln Gly Asn Tyr Asn Asn Glu
130 135 140

Ile Gly Leu Pro Leu Thr Ile Leu Glu Leu Asp Asn Asp Thr Glu Ile
145 150 155 160

Ser Ile Leu Glu Met Gly Met Ser Gly Phe His Glu Ile Glu Phe Leu
165 170 175

Ser Asn Leu Ala Gln Pro Asp Ile Ala Val Ile Thr Asn Ile Gly Glu
180 185 190

Ser His Met Gln Asp Leu Gly Ser Arg Glu Gly Ile Ala Lys Ala Lys
195 200 205

Ser Glu Ile Thr Ile Gly Leu Lys Asp Asn Gly Thr Phe Ile Tyr Asp
210 215 220

Gly Asp Glu Pro Leu Leu Lys Pro His Val Lys Glu Val Glu Asn Ala
225 230 235 240

Lys Cys Ile Ser Ile Gly Val Ala Thr Asp Asn Ala Leu Val Cys Ser
245 250 255

Val Asp Asp Arg Asp Thr Thr Gly Ile Ser Phe Thr Ile Asn Asn Lys
260 265 270

Glu His Tyr Asp Leu Pro Ile Leu Gly Lys His Asn Met Lys Asn Ala
275 280 285

Thr Ile Ala Ile Ala Val Gly His Glu Leu Gly Leu Thr Tyr Asn Thr
290 295 300

Ile Tyr Gln Asn Leu Lys Asn Val Ser Leu Thr Gly Met Arg Met Glu
305 310 315 320

Gln His Thr Leu Glu Asn Asp Ile Thr Val Ile Asn Asp Ala Tyr Asn
325 330 335

Ala Ser Pro Thr Ser Met Arg Ala Ala Ile Asp Thr Leu Ser Thr Leu
340 345 350

Thr Gly Arg Arg Ile Leu Ile Leu Gly Asp Val Leu Glu Leu Gly Glu
355 360 365

Asn Ser Lys Glu Met His Ile Gly Val Gly Asn Tyr Leu Glu Glu Lys
370 375 380

His Ile Asp Val Leu Tyr Thr Phe Gly Asn Glu Ala Lys Tyr Ile Tyr
385 390 395 400

Asp Ser Gly Gln Gln His Val Glu Lys Ala Gln His Phe Asn Ser Lys
405 410 415

Asp Asp Met Ile Glu Val Leu Ile Asn Asp Leu Lys Ala His Asp Arg
420 425 430

Val Leu Val Lys Gly Ser Arg Gly Met Lys Leu Glu Glu Val Val Asn
435 440 445

Ala Leu Ile Ser
450

<210> 27
<211> 399
<212> DNA
<213> Homo sapiens

<400> 27
atgacaatga cagatccaat cgcagatatg cttactcgtg taagaaacgc aaacatggtg 60
cgtcacgaga agttagaatt acctgcatca aatattaaaa aagaaattgc tgaaatctta 120
aagagtgaag gtttcattaa aaatgttgaa tacgtagaag atgataaaca aggtgtactt 180
cgtttattct taaaatatgg tcaaaacgat gagcgtgtta tcacaggatt aaaacgtatt 240
tcaaaaccag gtttacgtgt ttatgcaaaa gctagcgaaa tgcctaaagt attaaatggt 300
ttaggtattg cattagtatc aacttctgaa ggtgtaatca ctgacaaaga agcaagaaaa 360
cgtaatgttg gtggagaaat tatcgcatac gtttggtaa 399

<210> 28
<211> 132
<212> PRT
<213> Homo sapiens

<400> 28
Met Thr Met Thr Asp Pro Ile Ala Asp Met Leu Thr Arg Val Arg Asn
1 5 10 15

Ala Asn Met Val Arg His Glu Lys Leu Glu Leu Pro Ala Ser Asn Ile
20 25 30

Lys Lys Glu Ile Ala Glu Ile Leu Lys Ser Glu Gly Phe Ile Lys Asn
35 40 45

Val Glu Tyr Val Glu Asp Asp Lys Gln Gly Val Leu Arg Leu Phe Leu
50 55 60

Lys Tyr Gly Gln Asn Asp Glu Arg Val Ile Thr Gly Leu Lys Arg Ile
65 70 75 80

Ser Lys Pro Gly Leu Arg Val Tyr Ala Lys Ala Ser Glu Met Pro Lys
85 90 95

Val Leu Asn Gly Leu Gly Ile Ala Leu Val Ser Thr Ser Glu Gly Val
100 105 110

Ile Thr Asp Lys Glu Ala Arg Lys Arg Asn Val Gly Gly Glu Ile Ile
115 120 125

Ala Tyr Val Trp
130

<210> 29
<211> 267
<212> DNA
<213> Homo sapiens

<400> 29
atggcaattt cacaagaacg taaaaacgaa atcattaaag aataccgtgt acacgaaact 60
gatactggtt caccagaagt acaaatcgct gtacttactg cagaaatcaa cgcagtaaac 120
gaacacttac gtacacacaa aaaagaccac cattcacgtc gtggattatt aaaaatggta 180
ggtcgtcgta gacatttatt aaactactta cgtagtaaag atattcaacg ttaccgtgaa 240
ttaattaaat cacttggcat ccgtcgt 267

<210> 30
<211> 89
<212> PRT
<213> Homo sapiens

<400> 30
Met Ala Ile Ser Gln Glu Arg Lys Asn Glu Ile Ile Lys Glu Tyr Arg
1 5 10 15

Val His Glu Thr Asp Thr Gly Ser Pro Glu Val Gln Ile Ala Val Leu
20 25 30

Thr Ala Glu Ile Asn Ala Val Asn Glu His Leu Arg Thr His Lys Lys
35 40 45

Asp His His Ser Arg Arg Gly Leu Leu Lys Met Val Gly Arg Arg Arg
50 55 60

His Leu Leu Asn Tyr Leu Arg Ser Lys Asp Ile Gln Arg Tyr Arg Glu
65 70 75 80

Leu Ile Lys Ser Leu Gly Ile Arg Arg
85

<210> 31
<211> 666
<212> DNA
<213> Homo sapiens

<400> 31
taaggaggga atactgtggg tcaaaaaatt aatccaatcg gacttcgtgt tggtattatc 60
cgtgattggg aagctaaatg gtatgctgaa aaagacttcg cttcactttt acacgaagat 120
ttaaaaatcc gtaaatttat tgataatgaa ttaaaagaag catcagtttc tcacgtagag 180
attgaacgtg ctgcaaaccg tatcaacatt gcaattcata ctggtaaacc tggtatggta 240
attggtaaag gcggttcaga aatcgaaaaa ttacgcaaca aattaaatgc gttaactgat 300
aaaaaagtac acatcaacgt aattgaaatc aaaaaagttg atcttgacgc tcgtttagta 360
gctgaaaaca tcgcacgtca attagaaaac cgtgcttcat tccgtcgtgt acaaaaacaa 420
gcaatcacta gagctatgaa acttggtgct aaaggtatca aaactcaagt atctggtcgt 480
ttaggcggag ctgacatcgc tcgtgctgaa caatattcag aaggaactgt tccacttcat 540
acgttacgtg ctgacatcga ttatgcacac gctgaagctg acactactta cggtaaatta 600
ggcgttaaag tatggattta tcgtggagaa gttcttccta ctaagaacac tagtggagga 660
ggaaaa 666

<210> 32
<211> 217
<212> PRT
<213> Homo sapiens

<400> 32
Val Gly Gln Lys Ile Asn Pro Ile Gly Leu Arg Val Gly Ile Ile Arg
1 5 10 15

Asp Trp Glu Ala Lys Trp Tyr Ala Glu Lys Asp Phe Ala Ser Leu Leu
20 25 30

His Glu Asp Leu Lys Ile Arg Lys Phe Ile Asp Asn Glu Leu Lys Glu
35 40 45

Ala Ser Val Ser His Val Glu Ile Glu Arg Ala Ala Asn Arg Ile Asn
50 55 60

Ile Ala Ile His Thr Gly Lys Pro Gly Met Val Ile Gly Lys Gly Gly
65 70 75 80

Ser Glu Ile Glu Lys Leu Arg Asn Lys Leu Asn Ala Leu Thr Asp Lys
85 90 95

Lys Val His Ile Asn Val Ile Glu Ile Lys Lys Val Asp Leu Asp Ala
100 105 110

Arg Leu Val Ala Glu Asn Ile Ala Arg Gln Leu Glu Asn Arg Ala Ser
115 120 125

Phe Arg Arg Val Gln Lys Gln Ala Ile Thr Arg Ala Met Lys Leu Gly
130 135 140

Ala Lys Gly Ile Lys Thr Gln Val Ser Gly Arg Leu Gly Gly Ala Asp
145 150 155 160

Ile Ala Arg Ala Glu Gln Tyr Ser Glu Gly Thr Val Pro Leu His Thr
165 170 175

Leu Arg Ala Asp Ile Asp Tyr Ala His Ala Glu Ala Asp Thr Thr Tyr
180 185 190

Gly Lys Leu Gly Val Lys Val Trp Ile Tyr Arg Gly Glu Val Leu Pro
195 200 205

Thr Lys Asn Thr Ser Gly Gly Gly Lys
210 215

<210> 33
<211> 498
<212> DNA
<213> Homo sapiens

<400> 33
atggctcgta gagaagaaga gacgaaagaa tttgaagaac gcgttgttac aatcaaccgt 60
gtagcaaaag ttgtaaaagg tggtcgtcgt ttccgtttca ctgcattagt tgtagttgga 120
gacaaaaatg gtcgtgtagg tttcggtact ggtaaagctc aagaggtacc agaagcaatc 180
aaaaaagctg ttgaagcagc taaaaaagat ttagtagttg ttccacgtgt tgaaggtaca 240

actccacaca caattactgg ccgttacggt tcaggaagcg tatttatgaa accggctgca 300
cctggtacag gagttatcgc tggtggtcct gttcgtgccg tacttgaatt agcaggtatc 360
actgatatct taagtaaatc attaggatca aacacaccaa tcaacatggt tcgtgctaca 420
atcgatggtt tacaaaacct taaaaatgct gaagatgttg cgaaattacg tggcaaaaca 480
gtagaagaat tatacaat 498

<210> 34
<211> 166
<212> PRT
<213> Homo sapiens

<400> 34
Met Ala Arg Arg Glu Glu Glu Thr Lys Glu Phe Glu Glu Arg Val Val
1 5 10 15

Thr Ile Asn Arg Val Ala Lys Val Val Lys Gly Gly Arg Arg Phe Arg
20 25 30

Phe Thr Ala Leu Val Val Val Gly Asp Lys Asn Gly Arg Val Gly Phe
35 40 45

Gly Thr Gly Lys Ala Gln Glu Val Pro Glu Ala Ile Lys Lys Ala Val
50 55 60

Glu Ala Ala Lys Lys Asp Leu Val Val Val Pro Arg Val Glu Gly Thr
65 70 75 80

Thr Pro His Thr Ile Thr Gly Arg Tyr Gly Ser Gly Ser Val Phe Met
85 90 95

Lys Pro Ala Ala Pro Gly Thr Gly Val Ile Ala Gly Gly Pro Val Arg
100 105 110

Ala Val Leu Glu Leu Ala Gly Ile Thr Asp Ile Leu Ser Lys Ser Leu
115 120 125

Gly Ser Asn Thr Pro Ile Asn Met Val Arg Ala Thr Ile Asp Gly Leu
130 135 140

Gln Asn Leu Lys Asn Ala Glu Asp Val Ala Lys Leu Arg Gly Lys Thr
145 150 155 160

Val Glu Glu Leu Tyr Asn
165

<210> 35
<211> 390
<212> DNA
<213> Homo sapiens

<400> 35
atggcacaag ttgaatatag aggcacaggc cgtcgtaaaa actcagtagc acgtgtacgt 60
ttagtaccag gtgaaggtaa catcacagtt aataaccgtg acgtacgcga atacttacca 120
ttcgaatcat taatttaga cttaaaccaa ccatttgatg taactgaaac taaaggtaac 180
tatgatgttt tagttaacgt tcatggtggt ggtttcactg gacaagctca agctatccgt 240
cacggaatcg ctcgtgcatt attagaagca gatcctgaat acagaggttc tttaaaacgc 300
gctggattac ttactcgtga cccacgtatg aaagaacata aaaaaccagg tcttaaagca 360
gctcgtcgtt cacctcaatt ctcaaaacgt 390

<210> 36
<211> 130
<212> PRT
<213> Homo sapiens

<400> 36
Met Ala Gln Val Glu Tyr Arg Gly Thr Gly Arg Arg Lys Asn Ser Val
1 5 10 15

Ala Arg Val Arg Leu Val Pro Gly Glu Gly Asn Ile Thr Val Asn Asn
20 25 30

Arg Asp Val Arg Glu Tyr Leu Pro Phe Glu Ser Leu Ile Leu Asp Leu
35 40 45

Asn Gln Pro Phe Asp Val Thr Glu Thr Lys Gly Asn Tyr Asp Val Leu
50 55 60

Val Asn Val His Gly Gly Gly Phe Thr Gly Gln Ala Gln Ala Ile Arg
65 70 75 80

His Gly Ile Ala Arg Ala Leu Leu Glu Ala Asp Pro Glu Tyr Arg Gly
85 90 95

Ser Leu Lys Arg Ala Gly Leu Leu Thr Arg Asp Pro Arg Met Lys Glu
100 105 110

His Lys Lys Pro Gly Leu Lys Ala Ala Arg Arg Ser Pro Gln Phe Ser
115 120 125

Lys Arg
130

<210> 37
<211> 306
<212> DNA
<213> Homo sapiens

<400> 37
atggcaaaac aaaaaatcag aatcagatta aaggcttatg atcaccgcgt aattgatcaa 60
tcagcagaga agattgtaga aacagcgaaa cgttctggtg cagatgtttc tggaccaatt 120
ccgttaccaa ctgagaaatc agtttacaca atcatccgtg ccgtgcataa gtataaagat 180
tcacgtgaac aattcgaaca acgtacacac aaacgtttaa tcgatattgt aaacccaaca 240
ccaaaaacag ttgacgcttt aatgggctta aacttaccat ctggtgtaga catcgaaatc 300
aaatta 306

<210> 38
<211> 102
<212> PRT
<213> Homo sapiens

<400> 38
Met Ala Lys Gln Lys Ile Arg Ile Arg Leu Lys Ala Tyr Asp His Arg
1 5 10 15

Val Ile Asp Gln Ser Ala Glu Lys Ile Val Glu Thr Ala Lys Arg Ser
20 25 30

Gly Ala Asp Val Ser Gly Pro Ile Pro Leu Pro Thr Glu Lys Ser Val

35 40 45

Tyr Thr Ile Ile Arg Ala Val His Lys Tyr Lys Asp Ser Arg Glu Gln
50 55 60

Phe Glu Gln Arg Thr His Lys Arg Leu Ile Asp Ile Val Asn Pro Thr
65 70 75 80

Pro Lys Thr Val Asp Ala Leu Met Gly Leu Asn Leu Pro Ser Gly Val
85 90 95

Asp Ile Glu Ile Lys Leu
100

<210> 39
<211> 267
<212> DNA
<213> Homo sapiens

<400> 39
atggctaaga aatctaaaat agcaaaagag agaaaaagag aagagttagt aaataaatat 60
tacgaattac gtaaagagtt aaaagcaaaa ggtgattacg aagcgttaag aaaattacca 120
agagattcat cacctacacg tttaactaga agatgtaaag taactggaag acctagaggt 180
gtattacgta aatttgaaat gtctcgtatt gcgtttagag aacatgcgca caaaggacaa 240
attccaggtg ttaaaaaatc aagttgg 267

<210> 40
<211> 89
<212> PRT
<213> Homo sapiens

<400> 40
Met Ala Lys Lys Ser Lys Ile Ala Lys Glu Arg Lys Arg Glu Glu Leu
1 5 10 15

Val Asn Lys Tyr Tyr Glu Leu Arg Lys Glu Leu Lys Ala Lys Gly Asp
20 25 30

Tyr Glu Ala Leu Arg Lys Leu Pro Arg Asp Ser Ser Pro Thr Arg Leu
35 40 45

Thr Arg Arg Cys Lys Val Thr Gly Arg Pro Arg Gly Val Leu Arg Lys
50 55 60

Phe Glu Met Ser Arg Ile Ala Phe Arg Glu His Ala His Lys Gly Gln
65 70 75 80

Ile Pro Gly Val Lys Lys Ser Ser Trp
85

<210> 41
<211> 276
<212> DNA
<213> Homo sapiens

<400> 41
atggctcgta gtattaaaaa aggacctttc gtcgatgagc atttaatgaa aaaagttgaa 60
gctcaagaag gaagcgaaaa gaaacaagta atcaaaacat ggtcacgtcg ttctacaatt 120

ttccctaatt tcatcggaca tacttttgca gtatacgacg gacgtaaaca cgtacctgta 180
tatgtaactg aagatatggt aggtcataaa ttaggtgagt ttgctcctac tcgtacattc 240
aaaggacacg ttgcagacga caagaaaaca agaaga 276

<210> 42
<211> 92
<212> PRT
<213> Homo sapiens

<400> 42
Met Ala Arg Ser Ile Lys Lys Gly Pro Phe Val Asp Glu His Leu Met
1 5 10 15

Lys Lys Val Glu Ala Gln Glu Gly Ser Glu Lys Lys Gln Val Ile Lys
20 25 30

Thr Trp Ser Arg Arg Ser Thr Ile Phe Pro Asn Phe Ile Gly His Thr
35 40 45

Phe Ala Val Tyr Asp Gly Arg Lys His Val Pro Val Tyr Val Thr Glu
50 55 60

Asp Met Val Gly His Lys Leu Gly Glu Phe Ala Pro Thr Arg Thr Phe
65 70 75 80

Lys Gly His Val Ala Asp Asp Lys Lys Thr Arg Arg
85 90

<210> 43
<211> 183
<212> DNA
<213> Homo sapiens

<400> 43
atggctaaaa cttcaatggt tgctaagcaa caaaaaaaac aaaaatatgc agttcgtgaa 60
tacactcgtt gtgaacgttg tggccgtcca cattctgtat atcgtaaatt taaattatgc 120
cgtatttgtt tccgtgaatt agcttacaaa ggccaaatcc ctggcgttcg taaagctagc 180
tgg 183

<210> 44
<211> 61
<212> PRT
<213> Homo sapiens

<400> 44
Met Ala Lys Thr Ser Met Val Ala Lys Gln Gln Lys Lys Gln Lys Tyr
1 5 10 15

Ala Val Arg Glu Tyr Thr Arg Cys Glu Arg Cys Gly Arg Pro His Ser
20 25 30

Val Tyr Arg Lys Phe Lys Leu Cys Arg Ile Cys Phe Arg Glu Leu Ala
35 40 45

Tyr Lys Gly Gln Ile Pro Gly Val Arg Lys Ala Ser Trp
50 55 60

<210> 45

<211> 699
<212> DNA
<213> Homo sapiens

<400> 45
atggctagaa aagttgttgt agttgatgat gaaaaaccga ttgctgatat tttagaattt 60
aacttaaaaa aagaaggata cgatgtgtac tgtgcatacg atggtaatga tgcagtcgac 120
ttaatttatg aagaagaacc agacatcgta ttactagata tcatgttacc tggtcgtgat 180
ggtatggaag tatgtcgtga agtgcgcaaa aaatacgaaa tgccaataat aatgcttact 240
gctaaagatt cagaaattga taaagtgctt ggtttagaac taggtgcaga tgactatgta 300
acgaaaccgt ttagtacgcg tgaattaatc gcacgtgtga aagcgaactt acgtcgtcat 360
tactcacaac cagcacaaga cactggaaat gtaacgaatg aaatcacaat taaagatatt 420
gtgatttatc cagacgcata ttctattaaa aaacgtggcg aagatattga attaacacat 480
cgtgaatttg aattgttcca ttatttatca aaacatatgg gacaagtaat gacacgtgaa 540
catttattac aaacagtatg gggctatgat tactttggcg atgtacgtac ggtcgatgta 600
acgattcgtc gtttacgtga aaagattgaa gatgatccgt cacatcctga atatattgtg 660
acgcgtagag gcgttggata tttcctccaa caacatgag 699

<210> 46
<211> 233
<212> PRT
<213> Homo sapiens

<400> 46
Met Ala Arg Lys Val Val Val Val Asp Asp Glu Lys Pro Ile Ala Asp
1 5 10 15

Ile Leu Glu Phe Asn Leu Lys Lys Glu Gly Tyr Asp Val Tyr Cys Ala
20 25 30

Tyr Asp Gly Asn Asp Ala Val Asp Leu Ile Tyr Glu Glu Glu Pro Asp
35 40 45

Ile Val Leu Leu Asp Ile Met Leu Pro Gly Arg Asp Gly Met Glu Val
50 55 60

Cys Arg Glu Val Arg Lys Lys Tyr Glu Met Pro Ile Ile Met Leu Thr
65 70 75 80

Ala Lys Asp Ser Glu Ile Asp Lys Val Leu Gly Leu Glu Leu Gly Ala
85 90 95

Asp Asp Tyr Val Thr Lys Pro Phe Ser Thr Arg Glu Leu Ile Ala Arg
100 105 110

Val Lys Ala Asn Leu Arg Arg His Tyr Ser Gln Pro Ala Gln Asp Thr
115 120 125

Gly Asn Val Thr Asn Glu Ile Thr Ile Lys Asp Ile Val Ile Tyr Pro
130 135 140

Asp Ala Tyr Ser Ile Lys Lys Arg Gly Glu Asp Ile Glu Leu Thr His
145 150 155 160

Arg Glu Phe Glu Leu Phe His Tyr Leu Ser Lys His Met Gly Gln Val
165 170 175

Met Thr Arg Glu His Leu Leu Gln Thr Val Trp Gly Tyr Asp Tyr Phe
180 185 190

Gly Asp Val Arg Thr Val Asp Val Thr Ile Arg Arg Leu Arg Glu Lys
195 200 205

Ile Glu Asp Asp Pro Ser His Pro Glu Tyr Ile Val Thr Arg Arg Gly
210 215 220

Val Gly Tyr Phe Leu Gln Gln His Glu
225 230

<210> 47
<211> 937
<212> DNA
<213> Homo sapiens

<400> 47
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gagtttggat atcaattaga caatgataca actgggggaa tgttggtgtg tgtcagcaca 120
tccaaatggt acgagcgaga ttattaatgg accatatcaa ggtcaaacat tagaccgtat 180
ttggtcagaa catcgtgaat tgtttggtga tttcccaagc aaagattttc cgcttctaac 240
taaaatagtg gatgcaagag aatcactttc tattcatgtg caccctgata attcttatgc 300
ttatgagcat gaaaacgggc aatatggcaa atctgaatgt tggtatatta tagatgcaga 360
agaagatgca gaaatagtta tagggacatt agcagagtct agagaagaag ttgcgaatca 420
tgttcaacac ggaacgatag agtcgatact tagatatatt aaagtaaaac ctggagaatt 480
ctattttatt ccagcaggaa cagtwcatac tatttcttca ggaatattag catacgaaac 540
gatgcaatcg tcagacatta catatagact ttatgatttc aatcgtcaag ataatcaata 600
taatgataga ccgttaaata ttgaaaaagc tttagacgtt attcagtaca atgcaccatt 660
acctaatatt ttgcctgaaa gcgaaattat tgaaaaccat aagtgtacac acattgtatc 720
gaatgatttc tttacattgg ttaaatggga aatttctggc acgttaaatt atatgaagcc 780
tagagagttc tgtttagtta cagtgttgga aggcgaaggg caaatgattg tctatggtga 840
aattttcaaa ctgactactg gtacaaactt tattttgact tctgaagatt tggatagtgt 900
ctttgaaggt gatttcacat tgatgattag ctatgtg 937

<210> 48
<211> 312
<212> PRT
<213> Homo sapiens

<400> 48
Met Pro Leu Phe Leu Gln Pro Ile Leu Lys Thr Lys Leu Trp Gly Gly
1 5 10 15

Gln Arg Leu Ser Glu Phe Gly Tyr Gln Leu Asp Asn Asp Thr Thr Gly
20 25 30

Glu Cys Trp Cys Val Ser Ala His Pro Asn Gly Thr Ser Glu Ile Ile
35 40 45

Asn Gly Pro Tyr Gln Gly Gln Thr Leu Asp Arg Ile Trp Ser Glu His
50 55 60

Arg Glu Leu Phe Gly Asp Phe Pro Ser Lys Asp Phe Pro Leu Leu Thr
65 70 75 80

Lys Ile Val Asp Ala Arg Glu Ser Leu Ser Ile His Val His Pro Asp
85 90 95

Asn Ser Tyr Ala Tyr Glu His Glu Asn Gly Gln Tyr Gly Lys Ser Glu
100 105 110

Cys Trp Tyr Ile Ile Asp Ala Glu Glu Asp Ala Glu Ile Val Ile Gly
115 120 125

Thr Leu Ala Glu Ser Arg Glu Glu Val Ala Asn His Val Gln His Gly
130 135 140

Thr Ile Glu Ser Ile Leu Arg Tyr Ile Lys Val Lys Pro Gly Glu Phe
145 150 155 160

Tyr Phe Ile Pro Ala Gly Thr Val His Thr Ile Ser Ser Gly Ile Leu
165 170 175

Ala Tyr Glu Thr Met Gln Ser Ser Asp Ile Thr Tyr Arg Leu Tyr Asp
180 185 190

Phe Asn Arg Gln Asp Asn Gln Tyr Asn Asp Arg Pro Leu Asn Ile Glu
195 200 205

Lys Ala Leu Asp Val Ile Gln Tyr Asn Ala Pro Leu Pro Asn Ile Leu
210 215 220

Pro Glu Ser Glu Ile Ile Glu Asn His Lys Cys Thr His Ile Val Ser
225 230 235 240

Asn Asp Phe Phe Thr Leu Val Lys Trp Glu Ile Ser Gly Thr Leu Asn
245 250 255

Tyr Met Lys Pro Arg Glu Phe Cys Leu Val Thr Val Leu Glu Gly Glu
260 265 270

Gly Gln Met Ile Val Asp Gly Glu Ile Phe Lys Leu Thr Thr Gly Thr
275 280 285

Asn Phe Ile Leu Thr Ser Glu Asp Leu Asp Ser Val Phe Glu Gly Asp
290 295 300

Phe Thr Leu Met Ile Ser Tyr Val
305 310

<210> 49
<211> 837
<212> DNA
<213> Homo sapiens

<400> 49
atggctgtat tatatttagt gggcacacca attggtaatt tagcagatat tacttataga 60
gcagttgatg tattgaaacg tgttgatatg attgcttgtg aagacactag agtaactagt 120
aaactgtgta atcattatga tattccaact ccattaaagt catatcacga acataacaag 180
gataagcaga ctgcttttat cattgaacag ttagaattag gtcttgacgt tgcgctcgta 240
tctgatgctg gattgccctt aattagtgat cctggatacg aattagtagt ggcagccaga 300
gaagctaata ttaaagtaga gactgtgcct ggacctaatg ctgggctgac ggctttgatg 360
gctagtggat taccttcata tgtatataca tttttaggat ttttgccacg aaaagagaaa 420
gaaaaaagtg ctgtattaga gcaacgtatg catgaaaata gcacattaat tatatacgaa 480
tcaccgcatc gtgtgacaga tacattaaaa acaattgcaa agatagatgc aacacgacaa 540
gtatcactag ggcgtgaatt aactaagaag ttcgaacaaa ttgtaactga tgatgtaaca 600
caattacaag cattgattca gcaaggcgat gtaccattga aaggcgaatt cgttatctta 660
attgaaggtg ctaaagcgaa caatgagata tcgtggtttg atgatttatc tatcaatgag 720
catgttgatc attatattca aacttcacag atgaaaccaa aacaagctat taaaaaagtt 780
gctgaagaac gacaacttaa aacgaatgaa gtatataata tttatcatca aataagt 837

<210> 50
<211> 279
<212> PRT
<213> Homo sapiens

<400> 50
Met Ala Val Leu Tyr Leu Val Gly Thr Pro Ile Gly Asn Leu Ala Asp
1 5 10 15

Ile Thr Tyr Arg Ala Val Asp Val Leu Lys Arg Val Asp Met Ile Ala
20 25 30

Cys Glu Asp Thr Arg Val Thr Ser Lys Leu Cys Asn His Tyr Asp Ile
35 40 45

Pro Thr Pro Leu Lys Ser Tyr His Glu His Asn Lys Asp Lys Gln Thr
50 55 60

Ala Phe Ile Ile Glu Gln Leu Glu Leu Gly Leu Asp Val Ala Leu Val
65 70 75 80

Ser Asp Ala Gly Leu Pro Leu Ile Ser Asp Pro Gly Tyr Glu Leu Val
85 90 95

Val Ala Ala Arg Glu Ala Asn Ile Lys Val Glu Thr Val Pro Gly Pro
100 105 110

Asn Ala Gly Leu Thr Ala Leu Met Ala Ser Gly Leu Pro Ser Tyr Val
115 120 125

Tyr Thr Phe Leu Gly Phe Leu Pro Arg Lys Glu Lys Glu Lys Ser Ala
130 135 140

Val Leu Glu Gln Arg Met His Glu Asn Ser Thr Leu Ile Ile Tyr Glu
145 150 155 160

Ser Pro His Arg Val Thr Asp Thr Leu Lys Thr Ile Ala Lys Ile Asp
165 170 175

Ala Thr Arg Gln Val Ser Leu Gly Arg Glu Leu Thr Lys Lys Phe Glu
180 185 190

Gln Ile Val Thr Asp Asp Val Thr Gln Leu Gln Ala Leu Ile Gln Gln
195 200 205

Gly Asp Val Pro Leu Lys Gly Glu Phe Val Ile Leu Ile Glu Gly Ala
210 215 220

Lys Ala Asn Asn Glu Ile Ser Trp Phe Asp Asp Leu Ser Ile Asn Glu
225 230 235 240

His Val Asp His Tyr Ile Gln Thr Ser Gln Met Lys Pro Lys Gln Ala
245 250 255

Ile Lys Lys Val Ala Glu Glu Arg Gln Leu Lys Thr Asn Glu Val Tyr
260 265 270

Asn Ile Tyr His Gln Ile Ser
275

<210> 51
<211> 624
<212> DNA
<213> Homo sapiens

<400> 51
atgaaatttg gaaaaacaat cgcagtagta ttagcatcta gtgtcttgct tgcaggatgt 60
actacggata aaaaagaaat taaggcatat ttaaagcaag tggataaaat taaagatgat 120
gaagaaccaa ttaaaactgt tggtaagaaa attgctgaat tagatgagaa aaagaaaaaa 180
ttaactgaag atgtcaatag taaagataca gcagttcgcg gtaaagcagt aaaggattta 240
attaaaaatg ccgatgatcg tctaaaggaa tttgaaaaag aagaagacgc aattaagaag 300
tctgaacaag actttaagaa agcaaaaagt cacgttgata acattgataa tgatgttaaa 360
cgtaaagaag taaaacaatt agatgatgta ttaaaagaaa aatataagtt acacagtgat 420
tacgcgaaag catataaaaa ggctgtaaac tcagagaaaa cattatttaa atatttaaat 480
caaaatgacg cgacacaaca aggtgttaac gaaaaatcaw aagcaataga acagaactat 540
aaaaagttaa aagaagtatc agataagtat acaaaagtac taaataaggt tggtaaagaa 600
aagcaagacg ttgatcaatt taaa 624

<210> 52
<211> 208
<212> PRT
<213> Homo sapiens

<220>
<221> MISC_FEATURE
<222> (174)..(174)
<223> Xaa equals any amino acid

<400> 52
Met Lys Phe Gly Lys Thr Ile Ala Val Val Leu Ala Ser Ser Val Leu
1 5 10 15

Leu Ala Gly Cys Thr Thr Asp Lys Lys Glu Ile Lys Ala Tyr Leu Lys
20 25 30

Gln Val Asp Lys Ile Lys Asp Asp Glu Glu Pro Ile Lys Thr Val Gly
35 40 45

Lys Lys Ile Ala Glu Leu Asp Glu Lys Lys Lys Lys Leu Thr Glu Asp
50 55 60

Val Asn Ser Lys Asp Thr Ala Val Arg Gly Lys Ala Val Lys Asp Leu
65 70 75 80

Ile Lys Asn Ala Asp Asp Arg Leu Lys Glu Phe Glu Lys Glu Glu Asp
85 90 95

Ala Ile Lys Lys Ser Glu Gln Asp Phe Lys Lys Ala Lys Ser His Val
100 105 110

Asp Asn Ile Asp Asn Asp Val Lys Arg Lys Glu Val Lys Gln Leu Asp
115 120 125

Asp Val Leu Lys Glu Lys Tyr Lys Leu His Ser Asp Tyr Ala Lys Ala
130 135 140

Tyr Lys Lys Ala Val Asn Ser Glu Lys Thr Leu Phe Lys Tyr Leu Asn
145 150 155 160

Gln Asn Asp Ala Thr Gln Gln Gly Val Asn Glu Lys Ser Xaa Ala Ile
165 170 175

Glu Gln Asn Tyr Lys Lys Leu Lys Glu Val Ser Asp Lys Tyr Thr Lys
180 185 190

Val Leu Asn Lys Val Gly Lys Glu Lys Gln Asp Val Asp Gln Phe Lys
195 200 205

<210> 53
<211> 717
<212> DNA
<213> Homo sapiens

<400> 53
atcgaggaca gaatattgtt aaagtatgaa catattgcta agcagcttaa tgcgtttata 60
catcaatcta atttcaaacc cggtgataaa ttgccaagcg tgacgcaatt aaaagaacgt 120
tatcaagtaa gtaagagtac tatcattaaa gcattaggct tattggaaca agatggtttg 180
atctatcaag cacaaggcag tggtatttat gtgagaaata ttgctgatgc caatcgtatc 240
aacgtcttta agactaatgg tttctctaaa agtttaggtg aacaccgaat gacaagtaag 300
gtacttgttt ttaaggagat tgcaacgcca cctaaatctg tacaagatga gctccaatta 360
aatgcagatg ataccgtcta ctatttagag cgattaagat tcgtggacga tgatgtttta 420
tgtatcgaat attcttatta tcataaagaa atcgtgaaat atttaaatga tgatattgct 480
aagggctcta tcttcgacta tttagaatca aacatgaaac ttcgtattgg tttttcagat 540
attttcttta atgtagatca actcacttca agtgaagctt cattactaca attgtctaca 600
ggtgaaccat gtttacgtta ccaccagact ttttatacaa tgactggcaa accctttgat 660
tcatctgaca tcgtatttca ttatcgtcat gcacagtttt atattcctag taaaaag 717

<210> 54
<211> 239
<212> PRT
<213> Homo sapiens

<400> 54
Ile Glu Asp Arg Ile Leu Leu Lys Tyr Glu His Ile Ala Lys Gln Leu
1 5 10 15

Asn Ala Phe Ile His Gln Ser Asn Phe Lys Pro Gly Asp Lys Leu Pro
20 25 30

Ser Val Thr Gln Leu Lys Glu Arg Tyr Gln Val Ser Lys Ser Thr Ile
35 40 45

Ile Lys Ala Leu Gly Leu Leu Glu Gln Asp Gly Leu Ile Tyr Gln Ala
50 55 60

Gln Gly Ser Gly Ile Tyr Val Arg Asn Ile Ala Asp Ala Asn Arg Ile
65 70 75 80

Asn Val Phe Lys Thr Asn Gly Phe Ser Lys Ser Leu Gly Glu His Arg
85 90 95

Met Thr Ser Lys Val Leu Val Phe Lys Glu Ile Ala Thr Pro Pro Lys
100 105 110

Ser Val Gln Asp Glu Leu Gln Leu Asn Ala Asp Asp Thr Val Tyr Tyr
115 120 125

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Leu Glu Arg Leu Arg Phe Val Asp Asp Asp Val Leu Cys Ile Glu Tyr
    130                 135                 140

Ser Tyr Tyr His Lys Glu Ile Val Lys Tyr Leu Asn Asp Asp Ile Ala
145                 150                 155                 160

Lys Gly Ser Ile Phe Asp Tyr Leu Glu Ser Asn Met Lys Leu Arg Ile
                165                 170                 175

Gly Phe Ser Asp Ile Phe Phe Asn Val Asp Gln Leu Thr Ser Ser Glu
            180                 185                 190

Ala Ser Leu Leu Gln Leu Ser Thr Gly Glu Pro Cys Leu Arg Tyr His
        195                 200                 205

Gln Thr Phe Tyr Thr Met Thr Gly Lys Pro Phe Asp Ser Ser Asp Ile
    210                 215                 220

Val Phe His Tyr Arg His Ala Gln Phe Tyr Ile Pro Ser Lys Lys
225                 230                 235
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<210> 55
<211> 716
<212> DNA
<213> Homo sapiens

<400> 55
atgactgtag aatggttagc agaacaatta aaagaacata atattcaatt aactgagact 60
caaaaacaac agtttcaaac atattatcgt ttacttgttg aatggaatga aaagatgaat 120
ttgacaagta ttacagatga acacgatgta tatttgaaac atttttatga ttccattgca 180
cctagttttt attttgattt taatcagcct ataagtatat gtgatgtagg cgctggagct 240
ggttttccaa gtattccgtt aaaaataatg tttccgcagt taaaagtgac gattgttgat 300
tcattaaata agcgtattca atttttaaac catttagcgt cagaattaca attacaggat 360
gtcagcttta tacacgatag agcagaaaca tttggtaagg gtgtctacag ggagtcttat 420
gatgttgtta ctgcaagagc agtagctaga ttatccgtgt taagtgaatt gtgtttaccg 480
ctagttaaaa aaggtggaca gtttgttgca ttaaaatctt caaaaggtga agaagaatta 540
gaagaagcaa aatttgcaat tagtgtgtta ggtggtaatg ttacagaaac acataccttt 600
gaattgccag aagatgctgg agagcgccag atgttcatta ttgataaaaa aagacagacg 660
ccgaaaaagt atccaagaaa accagggacg ctaataagac tcctttactt gaaaaa 716

<210> 56
<211> 239
<212> PRT
<213> Homo sapiens

<400> 56
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Met Thr Val Glu Trp Leu Ala Glu Gln Leu Lys Glu His Asn Ile Gln
  1               5                  10                  15

Leu Thr Glu Thr Gln Lys Gln Gln Phe Gln Thr Tyr Tyr Arg Leu Leu
            20                  25                  30

Val Glu Trp Asn Glu Lys Met Asn Leu Thr Ser Ile Thr Asp Glu His
        35                  40                  45

Asp Val Tyr Leu Lys His Phe Tyr Asp Ser Ile Ala Pro Ser Phe Tyr
    50                  55                  60

Phe Asp Phe Asn Gln Pro Ile Ser Ile Cys Asp Val Gly Ala Gly Ala
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 65                  70                  75                  80

Gly Phe Pro Ser Ile Pro Leu Lys Ile Met Phe Pro Gln Leu Lys Val
                 85                  90                  95

Thr Ile Val Asp Ser Leu Asn Lys Arg Ile Gln Phe Leu Asn His Leu
            100                 105                 110

Ala Ser Glu Leu Gln Leu Gln Asp Val Ser Phe Ile His Asp Arg Ala
        115                 120                 125

Glu Thr Phe Gly Lys Gly Val Tyr Arg Glu Ser Tyr Asp Val Val Thr
    130                 135                 140

Ala Arg Ala Val Ala Arg Leu Ser Val Leu Ser Glu Leu Cys Leu Pro
145                 150                 155                 160

Leu Val Lys Lys Gly Gly Gln Phe Val Ala Leu Lys Ser Ser Lys Gly
                165                 170                 175

Glu Glu Glu Leu Glu Glu Ala Lys Phe Ala Ile Ser Val Leu Gly Gly
            180                 185                 190

Asn Val Thr Glu Thr His Thr Phe Glu Leu Pro Glu Asp Ala Gly Glu
        195                 200                 205

Arg Gln Met Phe Ile Ile Asp Lys Lys Arg Gln Thr Pro Lys Lys Tyr
    210                 215                 220

Pro Arg Lys Pro Gly Thr Pro Asn Lys Thr Pro Leu Leu Glu Lys
225                 230                 235
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<210> 57
<211> 1191
<212> DNA
<213> Homo sapiens

<400> 57
atggcacata ccattacgat tgttggctta ggaaactatg gcattgatga tttgccgcta 60
gggatatata aatttttaaa gacacaagat aaagtttatg caagaacgtt agatcatcca 120
gttatagaat cattgcaaga tgaattaaca tttcagagtt ttgaccatgt ttatgaagca 180
cataaccaat ttgaagatgt ctatattgat attgtggcgc aattggttga agctgctaat 240
gaaaaagata ttgtctatgc ggttccgggt catcctagag ttgctgagac aactacagtg 300
aaattactgg ctttagcaaa ggacaatact gatatagatg tgaaagtttt aggtgggaaa 360
agctttattg atgatgtgtt tgaagcagtt aatgtagatc caaatgatgg cttcacactg 420
ttagatgcga catcattaca agaagtaaca cttaatgtta gaacgcatac attgattacg 480
caagtttata gtgcaatggt tgctgctaat ttgaaaatca ctttaatgga acgatatcct 540
gatgattacc ctgttcaaat tgtcactggt gcacgaagcg atggtgcgga taacgttgtg 600
acatgcccat tatatgaatt ggatcatgat gaaaatgcat tcaataattt gacgagtgta 660
ttcgtaccaa aaatcataac atcgacatat ttgtatcatg actttgattt tgcaacggaa 720
gtgattgata ctttagttga tgaagataaa ggttgtccat gggataaagt gcaaacgcat 780
gmaacgctaa agcgttattt acttgaagaa acatttgaat tgttcgaagc tattgacaat 840
gaagatgatt ggcatatgat tgaagaacta ggagatattt tattacaagt gttattgcat 900
actagtattg gtaaaaaaga agggtatatc gacattaaag aagtgattac aagtcttaat 960
gctaaaatga ttcgtagaca cccacacata tttggtgatg ccaatgctga aactatcgat 1020
gacttaaaag aaatttggtc taaggcgaaa gatgctgaag gtaaacagcc aagagttaaa 1080
tttgaaaaag tatttgcaga gcatttttta aatttatatg agaagacgaa ggataagtca 1140
tttgatgagg ccgcgttaaa gcagtggcta gaaaaagggg agagtaatac a 1191

<210> 58
<211> 397
<212> PRT
<213> Homo sapiens

<220>
<221> MISC_FEATURE
<222> (261)..(261)
<223> Xaa equals any amino acid

<400> 58
Met Ala His Thr Ile Thr Ile Val Gly Leu Gly Asn Tyr Gly Ile Asp
1   5   10   15

Asp Leu Pro Leu Gly Ile Tyr Lys Phe Leu Lys Thr Gln Asp Lys Val
            20   25   30

Tyr Ala Arg Thr Leu Asp His Pro Val Ile Glu Ser Leu Gln Asp Glu
        35   40   45

Leu Thr Phe Gln Ser Phe Asp His Val Tyr Glu Ala His Asn Gln Phe
    50   55   60

Glu Asp Val Tyr Ile Asp Ile Val Ala Gln Leu Val Glu Ala Ala Asn
65   70   75   80

Glu Lys Asp Ile Val Tyr Ala Val Pro Gly His Pro Arg Val Ala Glu
                85   90   95

Thr Thr Thr Val Lys Leu Leu Ala Leu Ala Lys Asp Asn Thr Asp Ile
            100   105   110

Asp Val Lys Val Leu Gly Gly Lys Ser Phe Ile Asp Asp Val Phe Glu
        115   120   125

Ala Val Asn Val Asp Pro Asn Asp Gly Phe Thr Leu Leu Asp Ala Thr
    130   135   140

Ser Leu Gln Glu Val Thr Leu Asn Val Arg Thr His Thr Leu Ile Thr
145   150   155   160

Gln Val Tyr Ser Ala Met Val Ala Ala Asn Leu Lys Ile Thr Leu Met
                165   170   175

Glu Arg Tyr Pro Asp Asp Tyr Pro Val Gln Ile Val Thr Gly Ala Arg
            180   185   190

Ser Asp Gly Ala Asp Asn Val Val Thr Cys Pro Leu Tyr Glu Leu Asp
        195   200   205

His Asp Glu Asn Ala Phe Asn Asn Leu Thr Ser Val Phe Val Pro Lys
    210   215   220

Ile Ile Thr Ser Thr Tyr Leu Tyr His Asp Phe Asp Phe Ala Thr Glu
225   230   235   240

Val Ile Asp Thr Leu Val Asp Glu Asp Lys Gly Cys Pro Trp Asp Lys
                245   250   255

Val Gln Thr His Xaa Thr Leu Lys Arg Tyr Leu Leu Glu Glu Thr Phe

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            260                 265                 270

Glu Leu Phe Glu Ala Ile Asp Asn Glu Asp Asp Trp His Met Ile Glu
        275                 280                 285

Glu Leu Gly Asp Ile Leu Leu Gln Val Leu Leu His Thr Ser Ile Gly
    290                 295                 300

Lys Lys Glu Gly Tyr Ile Asp Ile Lys Glu Val Ile Thr Ser Leu Asn
305                 310                 315                 320

Ala Lys Met Ile Arg Arg His Pro His Ile Phe Gly Asp Ala Asn Ala
                325                 330                 335

Glu Thr Ile Asp Asp Leu Lys Glu Ile Trp Ser Lys Ala Lys Asp Ala
            340                 345                 350

Glu Gly Lys Gln Pro Arg Val Lys Phe Glu Lys Val Phe Ala Glu His
        355                 360                 365

Phe Leu Asn Leu Tyr Glu Lys Thr Lys Asp Lys Ser Phe Asp Glu Ala
    370                 375                 380

Ala Leu Lys Gln Trp Leu Glu Lys Gly Glu Ser Asn Thr
385                 390                 395


<210> 59
<211> 804
<212> DNA
<213> Homo sapiens

<400> 59
aatgtaaatc attctaataa aacgacaact gtgtcttctt tacttgtata tgttacatat 60
attcacgata gagaggataa gaaaatggct caaatttcta aatataaacg tgtagttttg 120
aaactaagtg gtgaagcgtt agctggagaa aaaggatttg gcataaatcc agtaattatt 180
aaaagtgttg ctgagcaagt ggctgaagtt gctaaaatgg actgtgaaat cgcagtaatc 240
gttggtggcg gaaacatttg gagaggtaaa acaggtagtg acttaggtat ggaccgtgga 300
actgctgatt acatgggtat gcttgcaact gtaatgaatg ccttagcatt acaagatagt 360
ttagaacaat tggattgtga tacacgagta ttaacatcta ttgaaatgaa gcaagtggct 420
gaaccttata ttcgtcgtcg tgcaattaga cacttagaaa agaaacgcgt agttattttt 480
gctgcaggta ttggaaaccc atacttctct acagatacta cagcggcatt acgtgctgca 540
gaagttgaag cagatgttat tttaatgggc aaaaataatg tagatggtgt atattctgca 600
gatcctaaag taaacaaaga tgcggtaaaa tatgaacatt taacgcatat tcaaatgctt 660
caagaaggtt tacaagtaat ggattcaaca gcatcctcat tctgtatgga taataacatt 720
ccgttaactg ttttctctat tatggaagaa ggaaatatta aacgtgctgt tatgggtgaa 780
aagataggta cgttaattac aaaa                                       804

<210> 60
<211> 268
<212> PRT
<213> Homo sapiens

<400> 60
Asn Val Asn His Ser Asn Lys Thr Thr Thr Val Ser Ser Leu Leu Val
  1               5                  10                  15

Tyr Val Thr Tyr Ile His Asp Arg Glu Asp Lys Lys Met Ala Gln Ile
             20                  25                  30
```

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Ser Lys Tyr Lys Arg Val Val Leu Lys Leu Ser Gly Glu Ala Leu Ala
          35                  40                  45

Gly Glu Lys Gly Phe Gly Ile Asn Pro Val Ile Ile Lys Ser Val Ala
     50                  55                  60

Glu Gln Val Ala Glu Val Ala Lys Met Asp Cys Glu Ile Ala Val Ile
 65                  70                  75                  80

Val Gly Gly Gly Asn Ile Trp Arg Gly Lys Thr Gly Ser Asp Leu Gly
                 85                  90                  95

Met Asp Arg Gly Thr Ala Asp Tyr Met Gly Met Leu Ala Thr Val Met
            100                 105                 110

Asn Ala Leu Ala Leu Gln Asp Ser Leu Glu Gln Leu Asp Cys Asp Thr
        115                 120                 125

Arg Val Leu Thr Ser Ile Glu Met Lys Gln Val Ala Glu Pro Tyr Ile
    130                 135                 140

Arg Arg Arg Ala Ile Arg His Leu Glu Lys Lys Arg Val Val Ile Phe
145                 150                 155                 160

Ala Ala Gly Ile Gly Asn Pro Tyr Phe Ser Thr Asp Thr Thr Ala Ala
                165                 170                 175

Leu Arg Ala Ala Glu Val Glu Ala Asp Val Ile Leu Met Gly Lys Asn
            180                 185                 190

Asn Val Asp Gly Val Tyr Ser Ala Asp Pro Lys Val Asn Lys Asp Ala
        195                 200                 205

Val Lys Tyr Glu His Leu Thr His Ile Gln Met Leu Gln Glu Gly Leu
    210                 215                 220

Gln Val Met Asp Ser Thr Ala Ser Ser Phe Cys Met Asp Asn Asn Ile
225                 230                 235                 240

Pro Leu Thr Val Phe Ser Ile Met Glu Glu Gly Asn Ile Lys Arg Ala
                245                 250                 255

Val Met Gly Glu Lys Ile Gly Thr Leu Ile Thr Lys
            260                 265
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<210> 61
<211> 1068
<212> DNA
<213> Homo sapiens

<400> 61
atgacaaaag aaaatatttg tatcgttttt ggagggaaaa gtgcagaaca cgaagtatcg 60
attctgacag cacaaaatgt attaaatgca atagataaag acaaatatca tgttgatatc 120
atttatatta ccaatgatgg tgattggaga aagcaaaata atattacagc tgaaattaaa 180
tctactgatg agcttcattt agaaaatgga gaggcgcttg agatttcaca gctattgaaa 240
gaaagtagtt caggacaacc atacgatgca gtattcccat tattacatgg tcctaatggt 300
gaagatggca cgattcaagg gctttttgaa gttttggatg taccatatgt aggaaatggt 360
gtattgtcag ctgcaagttc tatggacaaa cttgtaatga aacaattatt tgaacatcga 420
gggttaccac agttaccttа tattagtttc ttacgttctg aatatgaaaa atatgaacat 480

aacattttaa aattagtaaa tgataaatta aattacccag tctttgttaa acctgctaac 540
ttagggtcaa gtgtaggtat cagtaaatgt aataatgaag cggaacttaa agaaggtatt 600
aaagaagcat tccaatttga ccgtaagctt gttatagaac aaggcgttaa cgcacgtgaa 660
attgaagtag cagttttagg aaatgactat cctgaagcga catggccagg tgaagtcgta 720
aaagatgtcg cgttttacga ttacaaatca aaatataaag atggtaaggt tcaattacaa 780
attccagctg acttagacga agatgttcaa ttaacgctta gaaatatggc attagaggca 840
ttcaaagcga cagattgttc tggtttagtc cgtgctgatt tctttgtaac agaagacaac 900
caaatatata ttaatgaaac aaatgcaatg cctggattta cggctttcag tatgtatcca 960
aagttatggg aaaatatggg cttatcttat ccagaattga ttacaaaact tatcgagctt 1020
gctaaagaac gtcaccagga taaacagaaa aataaataca aaattgac 1068

<210> 62
<211> 356
<212> PRT
<213> Homo sapiens

<400> 62
Met Thr Lys Glu Asn Ile Cys Ile Val Phe Gly Gly Lys Ser Ala Glu
1 5 10 15

His Glu Val Ser Ile Leu Thr Ala Gln Asn Val Leu Asn Ala Ile Asp
20 25 30

Lys Asp Lys Tyr His Val Asp Ile Ile Tyr Ile Thr Asn Asp Gly Asp
35 40 45

Trp Arg Lys Gln Asn Asn Ile Thr Ala Glu Ile Lys Ser Thr Asp Glu
50 55 60

Leu His Leu Glu Asn Gly Glu Ala Leu Glu Ile Ser Gln Leu Leu Lys
65 70 75 80

Glu Ser Ser Ser Gly Gln Pro Tyr Asp Ala Val Phe Pro Leu Leu His
85 90 95

Gly Pro Asn Gly Glu Asp Gly Thr Ile Gln Gly Leu Phe Glu Val Leu
100 105 110

Asp Val Pro Tyr Val Gly Asn Gly Val Leu Ser Ala Ala Ser Ser Met
115 120 125

Asp Lys Leu Val Met Lys Gln Leu Phe Glu His Arg Gly Leu Pro Gln
130 135 140

Leu Pro Tyr Ile Ser Phe Leu Arg Ser Glu Tyr Glu Lys Tyr Glu His
145 150 155 160

Asn Ile Leu Lys Leu Val Asn Asp Lys Leu Asn Tyr Pro Val Phe Val
165 170 175

Lys Pro Ala Asn Leu Gly Ser Ser Val Gly Ile Ser Lys Cys Asn Asn
180 185 190

Glu Ala Glu Leu Lys Glu Gly Ile Lys Glu Ala Phe Gln Phe Asp Arg
195 200 205

Lys Leu Val Ile Glu Gln Gly Val Asn Ala Arg Glu Ile Glu Val Ala
210 215 220

Val Leu Gly Asn Asp Tyr Pro Glu Ala Thr Trp Pro Gly Glu Val Val

225 230 235 240

Lys Asp Val Ala Phe Tyr Asp Tyr Lys Ser Lys Tyr Lys Asp Gly Lys
245 250 255

Val Gln Leu Gln Ile Pro Ala Asp Leu Asp Glu Asp Val Gln Leu Thr
260 265 270

Leu Arg Asn Met Ala Leu Glu Ala Phe Lys Ala Thr Asp Cys Ser Gly
275 280 285

Leu Val Arg Ala Asp Phe Phe Val Thr Glu Asp Asn Gln Ile Tyr Ile
290 295 300

Asn Glu Thr Asn Ala Met Pro Gly Phe Thr Ala Phe Ser Met Tyr Pro
305 310 315 320

Lys Leu Trp Glu Asn Met Gly Leu Ser Tyr Pro Glu Leu Ile Thr Lys
325 330 335

Leu Ile Glu Leu Ala Lys Glu Arg His Gln Asp Lys Gln Lys Asn Lys
340 345 350

Tyr Lys Ile Asp
355

<210> 63
<211> 861
<212> DNA
<213> Homo sapiens

<400> 63
atgacgaatc taccgatgaa taaattaata gatgaagtca ataatgaatt atcggttgcg 60
ataaataaat cagtaatgga tactcagcta gaagaaagta tgttgtattc attaaatgct 120
ggaggtaaac gcatccgacc agttctgtta ttactcactt tagattcact aaataccgag 180
tatgagttag gtatgaagag cgcaattgca ctagaaatga ttcatacata ttcacttatt 240
catgatgacc taccagcgat ggataatgat gattatcgac gaggaaaatt aacaaatcat 300
aaagtatatg gtgagtggac tgcgatatta gcaggtgatg ctttattaac taaagcattt 360
gaacttattt caagtgatga tagattaact gatgaagtaa aaataaaagt tctacaacgg 420
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gaaggccaac caattgatct tgaaactttg gaaatgatac acaaaacaaa aacaggagca 540
ttattaactt ttgcggttat gagtgcagca gatatcgcta atgtcgatga tacaactaaa 600
gaacatttag aaagttatag ttatcattta ggtatgatgt tccagattaa agatgattta 660
ttagactgct atggtgatga agcaaagtta ggtaaaaaag tgggcagcga tcttgaaaat 720
aataaaagta cgtacgtgag tttattaggg aaagatggcg cagaagataa attgacttat 780
catagagacg cagcagtgga tgaactaacg caaattgatg aacaattcaa tacaaaacac 840
ttattagaaa tcgttgattt a 861

<210> 64
<211> 287
<212> PRT
<213> Homo sapiens

<400> 64
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1 5 10 15

Leu Ser Val Ala Ile Asn Lys Ser Val Met Asp Thr Gln Leu Glu Glu
20 25 30

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Ser Met Leu Tyr Ser Leu Asn Ala Gly Gly Lys Arg Ile Arg Pro Val
         35                  40                  45

Leu Leu Leu Leu Thr Leu Asp Ser Leu Asn Thr Glu Tyr Glu Leu Gly
     50                  55                  60

Met Lys Ser Ala Ile Ala Leu Glu Met Ile His Thr Tyr Ser Leu Ile
 65                  70                  75                  80

His Asp Asp Leu Pro Ala Met Asp Asn Asp Asp Tyr Arg Arg Gly Lys
                 85                  90                  95

Leu Thr Asn His Lys Val Tyr Gly Glu Trp Thr Ala Ile Leu Ala Gly
            100                 105                 110

Asp Ala Leu Leu Thr Lys Ala Phe Glu Leu Ile Ser Ser Asp Asp Arg
        115                 120                 125

Leu Thr Asp Glu Val Lys Ile Lys Val Leu Gln Arg Leu Ser Ile Ala
    130                 135                 140

Ser Gly His Val Gly Met Val Gly Gly Gln Met Leu Asp Met Gln Ser
145                 150                 155                 160

Glu Gly Gln Pro Ile Asp Leu Glu Thr Leu Glu Met Ile His Lys Thr
                165                 170                 175

Lys Thr Gly Ala Leu Leu Thr Phe Ala Val Met Ser Ala Ala Asp Ile
            180                 185                 190

Ala Asn Val Asp Asp Thr Thr Lys Glu His Leu Glu Ser Tyr Ser Tyr
        195                 200                 205

His Leu Gly Met Met Phe Gln Ile Lys Asp Asp Leu Leu Asp Cys Tyr
    210                 215                 220

Gly Asp Glu Ala Lys Leu Gly Lys Lys Val Gly Ser Asp Leu Glu Asn
225                 230                 235                 240

Asn Lys Ser Thr Tyr Val Ser Leu Leu Gly Lys Asp Gly Ala Glu Asp
                245                 250                 255

Lys Leu Thr Tyr His Arg Asp Ala Ala Val Asp Glu Leu Thr Gln Ile
            260                 265                 270

Asp Glu Gln Phe Asn Thr Lys His Leu Leu Glu Ile Val Asp Leu
        275                 280                 285
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<212> DNA
<213> Homo sapiens

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<223> n equals a, t, g, or c

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aaaagcgaca agcgtcgagg caagttaacc atatcaaaga aatgggatca gacaactgct 180
attttaactg ggaatttttt attggcatta ggacttgaac acttaatggc cgttaaagat 240
aatcgtgtac atcaattgat atctgaatct atcgttgatg tttgtagagg ggaacttttc 300
caatttcaag accaatttaa cagtcaacag acaattatta attatttacg acgtatcaat 360
cgcaaaacag cactgttaat tcaaatatca actgaagttg gtgcaattac ttctcaatct 420
gataaagaga ctgtacgaaa attgaaaatg attggtcatt atataggtat gagcttccaa 480
atcattgatg atgtattaga cttcacaagt accgaaaaga aattaggtaa gccggtcgga 540
agtgatttgc ttaatggtca tattacgtta ccgattttat tagaaatgcg taaaaatcca 600
gacttcaaat tgaaaatcga acagttacgt cgtgatagtg aacgcaaaga atttgaagaa 660
tgtatccaaa tcattagaaa atctgacagc atcgatgagg ctaaggcagt aagttcgaag 720
tatttaagta aagcyttgaa tttgatttcy gagttaccag atggacatcc gagatcacta 780
cytttaagtt tgacgaaaaa aatgggttca anaaacacg 819

<210> 66
<211> 273
<212> PRT
<213> Homo sapiens

<220>
<221> MISC_FEATURE
<222> (261)..(261)
<223> Xaa equals any amino acid

<220>
<221> MISC_FEATURE
<222> (271)..(271)
<223> Xaa equals any amino acid

<400> 66
Phe Val Ile Leu Ser Ser Gln Phe Gly Lys Asp Glu Gln Thr Ser Glu
1 5 10 15

Gln Thr Tyr Gln Val Ala Val Ala Leu Glu Leu Ile His Met Ala Thr
20 25 30

Leu Val His Asp Asp Val Ile Asp Lys Ser Asp Lys Arg Arg Gly Lys
35 40 45

Leu Thr Ile Ser Lys Lys Trp Asp Gln Thr Thr Ala Ile Leu Thr Gly
50 55 60

Asn Phe Leu Leu Ala Leu Gly Leu Glu His Leu Met Ala Val Lys Asp
65 70 75 80

Asn Arg Val His Gln Leu Ile Ser Glu Ser Ile Val Asp Val Cys Arg
85 90 95

Gly Glu Leu Phe Gln Phe Gln Asp Gln Phe Asn Ser Gln Gln Thr Ile
100 105 110

Ile Asn Tyr Leu Arg Arg Ile Asn Arg Lys Thr Ala Leu Leu Ile Gln
115 120 125

Ile Ser Thr Glu Val Gly Ala Ile Thr Ser Gln Ser Asp Lys Glu Thr
130 135 140

Val Arg Lys Leu Lys Met Ile Gly His Tyr Ile Gly Met Ser Phe Gln
145 150 155 160

Ile Ile Asp Asp Val Leu Asp Phe Thr Ser Thr Glu Lys Lys Leu Gly
165 170 175

Lys Pro Val Gly Ser Asp Leu Leu Asn Gly His Ile Thr Leu Pro Ile
180 185 190

Leu Leu Glu Met Arg Lys Asn Pro Asp Phe Lys Leu Lys Ile Glu Gln
195 200 205

Leu Arg Arg Asp Ser Glu Arg Lys Glu Phe Glu Glu Cys Ile Gln Ile
210 215 220

Ile Arg Lys Ser Asp Ser Ile Asp Glu Ala Lys Ala Val Ser Ser Lys
225 230 235 240

Tyr Leu Ser Lys Ala Leu Asn Leu Ile Ser Glu Leu Pro Asp Gly His
245 250 255

Pro Arg Ser Leu Xaa Leu Ser Leu Thr Lys Lys Met Gly Ser Xaa Asn
260 265 270

Thr

<210> 67
<211> 504
<212> DNA
<213> Homo sapiens

<400> 67
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gaagcaatta ataatgcyma agaaaagaca gctaataata ccggcttaaa attaatattt 180
gcaattaatt atggtggcag agcagaactt gttcatagta ttaaaaatat gtttgacgag 240
cttcatcaac aaggtttaaa tagtgatatc atagatgaaa catatataaa caatcattta 300
atgacaaaag actatcctga tccagagttg ttaattcgta cttcaggaga acaaagaata 360
agtaatttct tgatttggca agtttcgtat agtgaattta tctttaatca aaaattatgg 420
cctgactttg acgaagatga attaattaaa tgtataaaaa tttatcagtc acgtcaaaga 480
cgctttggcg gattgagtga ggag 504

<210> 68
<211> 168
<212> PRT
<213> Homo sapiens

<220>
<221> MISC_FEATURE
<222> (47)..(47)
<223> Xaa equals any amino acid

<400> 68
Val Asn Tyr Ile Met Asn Leu Pro Val Asn Phe Leu Lys Thr Phe Leu
1 5 10 15

Pro Glu Leu Ile Glu Lys Asn Val Lys Val Glu Thr Ile Gly Phe Thr
20 25 30

Asp Lys Leu Pro Lys Ser Thr Ile Glu Ala Ile Asn Asn Ala Xaa Glu
35 40 45

Lys Thr Ala Asn Asn Thr Gly Leu Lys Leu Ile Phe Ala Ile Asn Tyr
50 55 60

Gly Gly Arg Ala Glu Leu Val His Ser Ile Lys Asn Met Phe Asp Glu
65 70 75 80

Leu His Gln Gln Gly Leu Asn Ser Asp Ile Ile Asp Glu Thr Tyr Ile
85 90 95

Asn Asn His Leu Met Thr Lys Asp Tyr Pro Asp Pro Glu Leu Leu Ile
100 105 110

Arg Thr Ser Gly Glu Gln Arg Ile Ser Asn Phe Leu Ile Trp Gln Val
115 120 125

Ser Tyr Ser Glu Phe Ile Phe Asn Gln Lys Leu Trp Pro Asp Phe Asp
130 135 140

Glu Asp Glu Leu Ile Lys Cys Ile Lys Ile Tyr Gln Ser Arg Gln Arg
145 150 155 160

Arg Phe Gly Gly Leu Ser Glu Glu
165

<210> 69
<211> 1823
<212> DNA
<213> Homo sapiens

<400> 69
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ctgcttgata attttaagaa gaatattacg cagtacgcga aacaattaga aattagtatt 180
gaaaaagtat atgacgaaaa gggctccgta aatgcacaaa aagatattca aaatttatta 240
agtgagtatg ccaaccgtca agaaattgga gaaattcgtt ttatagataa agaccaaatt 300
attattgcga cgacgaagca gtctaaccgt agtctaatca atcaaaaagc gaatgatagt 360
tctgtccaaa aagcactatc actaggacaa tcaaacgatc atttaatttt aaaagattat 420
ggcggtggta aggaccgtgt ctgggtatat aatatcccag ttaaagtcga taaaaaggta 480
attggtaata tttatatcga atcaaaaatt aatgacgttt ataaccaatt aaataatata 540
aatcaaatat tcattgttgg tacagctatt tcattattaa tcacagtcat cctaggattc 600
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gctgtgttac atgacgtaac tgaacaacaa caagttgaac gtgagcgtcg tgaatttgtt 1140
gccaatgtat cacatgagtt acgtacacct ttaacttcta tgaatagtta cattgaagca 1200
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cgattttcac agaatttgat cctgataaaa tgacgcaagt atttgataat gtcattacaa 1500
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<210> 70
<211> 608
<212> PRT
<213> Homo sapiens

<400> 70

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Met Lys Trp Leu Lys Gln Leu Gln Ser Leu His Thr Lys Phe Val Ile
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Val Tyr Val Leu Leu Ile Ile Ile Gly Met Gln Ile Ile Gly Leu Tyr
             20                  25                  30

Phe Thr Asn Asn Leu Glu Lys Glu Leu Leu Asp Asn Phe Lys Lys Asn
         35                  40                  45

Ile Thr Gln Tyr Ala Lys Gln Leu Glu Ile Ser Ile Glu Lys Val Tyr
     50                  55                  60

Asp Glu Lys Gly Ser Val Asn Ala Gln Lys Asp Ile Gln Asn Leu Leu
 65                  70                  75                  80

Ser Glu Tyr Ala Asn Arg Gln Glu Ile Gly Glu Ile Arg Phe Ile Asp
                 85                  90                  95

Lys Asp Gln Ile Ile Ile Ala Thr Thr Lys Gln Ser Asn Arg Ser Leu
            100                 105                 110

Ile Asn Gln Lys Ala Asn Asp Ser Ser Val Gln Lys Ala Leu Ser Leu
        115                 120                 125

Gly Gln Ser Asn Asp His Leu Ile Leu Lys Asp Tyr Gly Gly Gly Lys
    130                 135                 140

Asp Arg Val Trp Val Tyr Asn Ile Pro Val Lys Val Asp Lys Lys Val
145                 150                 155                 160

Ile Gly Asn Ile Tyr Ile Glu Ser Lys Ile Asn Asp Val Tyr Asn Gln
                165                 170                 175

Leu Asn Asn Ile Asn Gln Ile Phe Ile Val Gly Thr Ala Ile Ser Leu
            180                 185                 190

Leu Ile Thr Val Ile Leu Gly Phe Phe Ile Ala Arg Thr Ile Thr Lys
        195                 200                 205

Pro Ile Thr Asp Met Arg Asn Gln Thr Val Glu Met Ser Arg Gly Asn
    210                 215                 220

Tyr Thr Gln Arg Val Lys Ile Tyr Gly Asn Asp Glu Ile Gly Glu Leu
225                 230                 235                 240

Ala Leu Ala Phe Asn Asn Leu Ser Lys Arg Val Gln Glu Ala Gln Ala
                245                 250                 255
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Asn Thr Glu Ser Glu Lys Arg Arg Leu Asp Ser Val Ile Thr His Met
            260                 265                 270

Ser Asp Gly Ile Ile Ala Thr Asp Arg Arg Gly Arg Ile Arg Ile Val
        275                 280                 285

Asn Asp Met Ala Leu Lys Met Leu Gly Met Ala Lys Glu Asp Ile Ile
    290                 295                 300

Gly Tyr Tyr Met Leu Ser Val Leu Ser Leu Glu Asp Glu Phe Lys Leu
305                 310                 315                 320

Glu Glu Ile Gln Glu Asn Asn Asp Ser Phe Leu Leu Asp Leu Asn Glu
                325                 330                 335

Glu Glu Gly Leu Ile Ala Arg Val Asn Phe Ser Thr Ile Val Gln Glu
            340                 345                 350

Thr Gly Phe Val Thr Gly Tyr Ile Ala Val Leu His Asp Val Thr Glu
        355                 360                 365

Gln Gln Gln Val Glu Arg Glu Arg Arg Glu Phe Val Ala Asn Val Ser
    370                 375                 380

His Glu Leu Arg Thr Pro Leu Thr Ser Met Asn Ser Tyr Ile Glu Ala
385                 390                 395                 400

Leu Glu Glu Gly Ala Trp Lys Asp Glu Glu Leu Ala Pro Gln Phe Leu
                405                 410                 415

Ser Val Thr Arg Glu Glu Thr Glu Arg Met Ile Arg Leu Val Asn Asp
            420                 425                 430

Leu Leu Gln Leu Ser Lys Met Asp Asn Glu Ser Asp Gln Ile Asn Lys
        435                 440                 445

Glu Ile Ile Asp Phe Asn Met Phe Ile Asn Lys Ile Ile Asn Arg His
    450                 455                 460

Glu Met Ser Ala Lys Asp Thr Thr Phe Ile Arg Asp Ile Pro Lys Lys
465                 470                 475                 480

Thr Ile Phe Thr Glu Phe Asp Pro Asp Lys Met Thr Gln Val Phe Asp
                485                 490                 495

Asn Val Ile Thr Asn Ala Met Lys Tyr Ser Arg Gly Asp Lys Arg Val
            500                 505                 510

Glu Phe His Val Lys Gln Asn Pro Leu Tyr Asn Arg Met Thr Ile Arg
        515                 520                 525

Ile Lys Asp Asn Gly Ile Gly Ile Pro Ile Asn Lys Val Asp Lys Ile
    530                 535                 540

Phe Asp Arg Phe Tyr Arg Val Asp Lys Ala Arg Thr Arg Lys Met Gly
545                 550                 555                 560

Gly Thr Gly Leu Gly Leu Ala Ile Ser Lys Glu Ile Val Glu Ala His
                565                 570                 575
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Asn Gly Arg Ile Trp Ala Asn Ser Val Glu Gly Gln Gly Thr Ser Ile
580 585 590

Phe Ile Thr Leu Pro Cys Glu Val Ile Glu Asp Gly Asp Trp Asp Glu
595 600 605

<210> 71
<211> 2232
<212> DNA
<213> Homo sapiens

<400> 71
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cattctaatg gtcaagattt agtcatgaag gcaaatgaaa agtatttagt taagaatgca 180
caacaaccag aacgaggaaa gatatatgat cgtaatggta aagtgctagc agaagatgta 240
gaaagatata aacttgttgc agtaatagat aaaaaggcga gtgccaattc taaaaaacct 300
aggcatgtag ttgataaaaa agagactgca aagaaattat ctacagtcat taatatgaag 360
ccagaggaaa ttgaaaagag acttagtcaa aagaaagctt tccaaattga atttggacgc 420
aaaggaacaa atttaacgta tcaggacaaa ttgaaaatag agaaaatgaa tttgcctggt 480
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attggtagag ctcagaaaaa tccggatact ggtgaactta aaggtgcact tggagttgaa 600
aagatttttg atagttattt aagtggatct aaaggatcat tgagatatat tcatgatatt 660
tggggatata tcgcaccaaa tactaaaaaa gagaagcagc ctaaacgtgg tgatgatgtc 720
catttaacaa tcgattcaaa tattcaagta tttgttgaag aagctttaga tggcatggtt 780
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<210> 72
<211> 744
<212> PRT
<213> Homo sapiens

<400> 72
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Leu Leu Val Gly Leu Phe Gly Leu Leu Phe Phe Ile Leu Val Leu Arg
            20   25   30

Ile Ser Tyr Ile Met Ile Thr Gly His Ser Asn Gly Gln Asp Leu Val
        35   40   45

Met Lys Ala Asn Glu Lys Tyr Leu Val Lys Asn Ala Gln Gln Pro Glu
    50   55   60

Arg Gly Lys Ile Tyr Asp Arg Asn Gly Lys Val Leu Ala Glu Asp Val
65   70   75   80

Glu Arg Tyr Lys Leu Val Ala Val Ile Asp Lys Lys Ala Ser Ala Asn
                85   90   95

Ser Lys Lys Pro Arg His Val Val Asp Lys Lys Glu Thr Ala Lys Lys
            100   105   110

Leu Ser Thr Val Ile Asn Met Lys Pro Glu Glu Ile Glu Lys Arg Leu
        115   120   125

Ser Gln Lys Lys Ala Phe Gln Ile Glu Phe Gly Arg Lys Gly Thr Asn
    130   135   140

Leu Thr Tyr Gln Asp Lys Leu Lys Ile Glu Lys Met Asn Leu Pro Gly
145   150   155   160

Ile Ser Leu Leu Pro Glu Thr Glu Arg Phe Tyr Pro Asn Gly Asn Phe
                165   170   175

Ala Ser His Leu Ile Gly Arg Ala Gln Lys Asn Pro Asp Thr Gly Glu
            180   185   190

Leu Lys Gly Ala Leu Gly Val Glu Lys Ile Phe Asp Ser Tyr Leu Ser
        195   200   205

Gly Ser Lys Gly Ser Leu Arg Tyr Ile His Asp Ile Trp Gly Tyr Ile
    210   215   220

Ala Pro Asn Thr Lys Lys Glu Lys Gln Pro Lys Arg Gly Asp Asp Val
225   230   235   240

His Leu Thr Ile Asp Ser Asn Ile Gln Val Phe Val Glu Glu Ala Leu
                245   250   255

Asp Gly Met Val Glu Arg Tyr Gln Pro Lys Asp Leu Phe Ala Val Val
            260   265   270

Met Asp Ala Lys Thr Gly Glu Ile Leu Ala Tyr Ser Gln Arg Pro Thr
        275   280   285

Phe Asn Pro Glu Thr Gly Lys Asp Phe Gly Lys Lys Trp Ala Asn Asp
    290   295   300

Leu Tyr Gln Asn Thr Tyr Glu Pro Gly Ser Thr Phe Lys Ser Tyr Gly
305   310   315   320

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Leu Ala Ala Ala Ile Gln Glu Gly Ala Phe Asp Pro Asp Lys Lys Tyr
                325                 330                 335

Lys Ser Gly His Arg Asp Ile Met Gly Ser Arg Ile Ser Asp Trp Asn
            340                 345                 350

Arg Val Gly Trp Gly Glu Ile Pro Met Ser Leu Gly Phe Thr Tyr Ser
        355                 360                 365

Ser Asn Thr Leu Met Met His Leu Gln Asp Leu Val Gly Ala Asp Lys
    370                 375                 380

Met Lys Ser Trp Tyr Glu Arg Phe Gly Phe Gly Lys Ser Thr Lys Gly
385                 390                 395                 400

Met Phe Asp Gly Glu Ala Pro Gly Gln Ile Gly Trp Ser Asn Glu Leu
                405                 410                 415

Gln Gln Lys Thr Ser Ser Phe Gly Gln Ser Thr Thr Val Thr Pro Val
            420                 425                 430

Gln Met Leu Gln Ala Gln Ser Ala Phe Phe Asn Asp Gly Asn Met Leu
        435                 440                 445

Lys Pro Trp Phe Val Asn Ser Val Glu Asn Pro Val Ser Lys Arg Gln
    450                 455                 460

Phe Tyr Lys Gly Gln Lys Gln Ile Ala Gly Lys Pro Ile Thr Lys Asp
465                 470                 475                 480

Thr Ala Glu Lys Val Glu Lys Gln Leu Asp Leu Val Val Asn Ser Lys
                485                 490                 495

Lys Ser His Ala Ala Asn Tyr Arg Ile Asp Gly Tyr Glu Val Glu Gly
            500                 505                 510

Lys Thr Gly Thr Ala Gln Val Ala Ala Pro Asn Gly Gly Gly Tyr Val
        515                 520                 525

Lys Gly Pro Asn Pro Tyr Phe Val Ser Phe Met Gly Asp Ala Pro Lys
    530                 535                 540

Lys Asn Pro Lys Val Ile Val Tyr Ala Gly Met Ser Leu Ala Gln Lys
545                 550                 555                 560

Asn Asp Gln Glu Ala Tyr Glu Leu Gly Val Ser Lys Ala Phe Lys Pro
                565                 570                 575

Ile Met Glu Asn Thr Leu Lys Tyr Leu Asn Val Gly Lys Ser Lys Asp
            580                 585                 590

Asp Thr Ser Asn Ala Glu Tyr Ser Lys Val Pro Asp Val Glu Gly Gln
        595                 600                 605

Asp Lys Gln Lys Ala Ile Asp Asn Val Ser Ala Lys Ser Leu Glu Pro
    610                 615                 620

Val Thr Ile Gly Ser Gly Thr Gln Ile Lys Ala Gln Ser Ile Lys Ala
625                 630                 635                 640
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Gly Asn Lys Val Leu Pro His Ser Lys Val Leu Leu Leu Thr Asp Gly
645 650 655

Asp Leu Thr Met Pro Asp Met Ser Gly Trp Thr Lys Glu Asp Val Ile
660 665 670

Ala Phe Glu Asn Leu Thr Asn Ile Lys Val Asn Leu Lys Gly Ser Gly
675 680 685

Phe Val Ser His Gln Ser Ile Ser Lys Gly Gln Lys Leu Thr Glu Lys
690 695 700

Asp Lys Ile Asp Val Glu Phe Ser Ser Glu Asn Val Asp Ser Asn Ser
705 710 715 720

Thr Asn Asn Ser Asp Ser Asn Ser Asp Asp Lys Lys Lys Ser Asp Ser
725 730 735

Lys Thr Asp Lys Asp Lys Ser Asp
740

<210> 73
<211> 1677
<212> DNA
<213> Homo sapiens

<400> 73
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<212> PRT
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            20   25   30

Asn Thr Val Gln Ser Leu Glu Ser Met Gly Phe Lys Glu Pro Thr Pro
        35   40   45

Ile Gln Lys Asp Ser Ile Pro Tyr Ala Leu Gln Gly Ile Asp Ile Leu
    50   55   60

Gly Gln Ala Gln Thr Gly Thr Gly Lys Thr Gly Ala Phe Gly Ile Pro
65   70   75   80

Leu Ile Glu Lys Val Val Gly Lys Gln Gly Val Gln Ser Leu Ile Leu
                85   90   95

Ala Pro Thr Arg Glu Leu Ala Met Gln Val Ala Glu Gln Leu Arg Glu
            100   105   110

Phe Ser Arg Gly Gln Gly Val Gln Val Val Thr Val Phe Gly Gly Met
        115   120   125

Pro Ile Glu Arg Gln Ile Lys Ala Leu Lys Lys Gly Pro Gln Ile Val
    130   135   140

Val Gly Thr Pro Gly Arg Val Ile Asp His Leu Asn Arg Arg Thr Leu
145   150   155   160

Lys Thr Asp Gly Ile His Thr Leu Ile Leu Asp Glu Ala Asp Glu Met
                165   170   175

Met Asn Met Gly Phe Ile Asp Asp Met Arg Phe Ile Met Asp Lys Ile
            180   185   190

Pro Ala Val Gln Arg Gln Thr Met Leu Phe Ser Ala Thr Met Pro Lys
        195   200   205

Ala Ile Gln Ala Leu Val Gln Gln Phe Met Lys Ser Pro Lys Ile Ile
    210   215   220

Lys Thr Met Asn Asn Glu Met Ser Asp Pro Gln Ile Glu Glu Phe Tyr
225   230   235   240

Thr Ile Val Lys Glu Leu Glu Lys Phe Asp Thr Phe Thr Asn Phe Leu
                245   250   255

Asp Val His Gln Pro Glu Leu Ala Ile Val Phe Gly Arg Thr Lys Arg
            260   265   270

Arg Val Asp Glu Leu Thr Ser Ala Leu Ile Ser Lys Gly Tyr Lys Ala
        275   280   285

Glu Gly Leu His Gly Asp Ile Thr Gln Ala Lys Arg Leu Glu Val Leu
    290   295   300

Lys Lys Phe Lys Asn Asp Gln Ile Asn Ile Leu Val Ala Thr Asp Val
305 310 315 320

Ala Ala Arg Gly Leu Asp Ile Ser Gly Val Ser His Val Tyr Asn Phe
325 330 335

Asp Ile Pro Gln Asp Thr Glu Ser Tyr Thr His Arg Ile Gly Arg Thr
340 345 350

Gly Arg Ala Gly Lys Glu Gly Ile Ala Val Thr Phe Val Asn Pro Ile
355 360 365

Glu Met Asp Tyr Ile Arg Gln Ile Glu Asp Ala Asn Gly Arg Lys Met
370 375 380

Ser Ala Leu Arg Pro Pro His Arg Lys Glu Val Leu Gln Ala Arg Glu
385 390 395 400

Asp Asp Ile Lys Glu Lys Val Glu Asn Trp Met Ser Lys Glu Ser Glu
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Ser Arg Leu Lys Arg Ile Ser Thr Glu Leu Leu Asn Glu Tyr Asn Asp
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Val Asp Leu Val Ala Ala Leu Leu Gln Glu Leu Val Glu Ala Asn Asp
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Glu Val Glu Val Gln Leu Thr Phe Glu Lys Pro Leu Ser Arg Lys Gly
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Arg Asn Gly Lys Pro Ser Gly Ser Arg Asn Arg Asn Ser Lys Arg Gly
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Asn Pro Lys Phe Asp Ser Lys Ser Lys Arg Ser Lys Gly Tyr Ser Ser
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Lys Lys Lys Ser Thr Lys Lys Phe Asp Arg Lys Glu Lys Ser Ser Gly
500 505 510

Gly Ser Arg Pro Met Lys Gly Arg Thr Phe Ala Asp His Gln
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